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Number 3.

NOVEMBER, 1907.

$2.00 per year.
$3.00 with Directory

TEXTILE WORLD RECORD

Special Features

Impressions of the Cotton Conference and Trip Through the Cotton Belt; by the Editor, one of the party

Wool Carding

Braids and Braiding Machinery

Reed Marks — Their Prevention and Remedy

COPYRIGHT, 1907, LORD & NAGLE COMPANY, REG. U. S. PAT. OFF.

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The Textile-Finishing Machinery Co.

HOWARD BUILDING

STAIRWAYS, 83 EXCHANGE PLACE [ENTRANCES] ELEVATOR, 171 WESTMINSTER ST.

PROVIDENCE, R. I.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING
DYEING
DRYING

AND

FINISHING

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers,

Dyeing Machines,

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders, Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Soft Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

Hydraulic Presses and Pumps.

Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

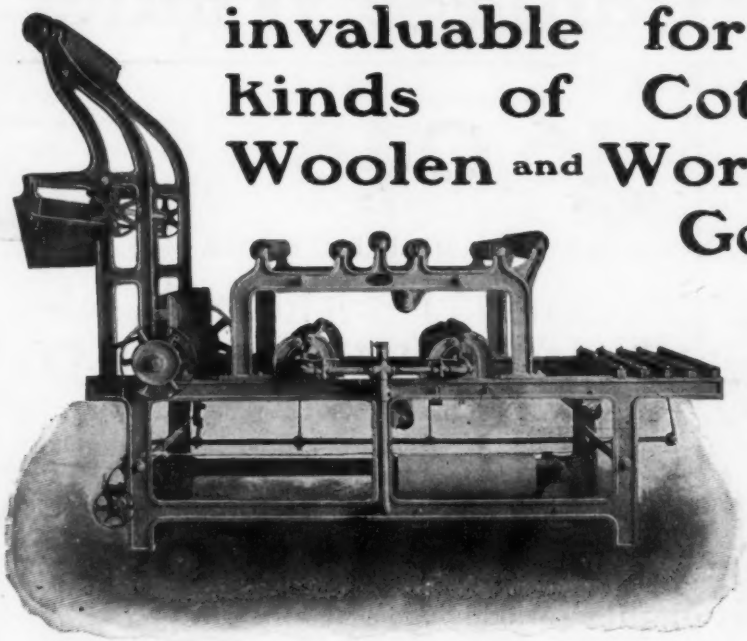
ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application.

Southern Agent, STUART W. CRAMER, Charlotte, N. C., Equitable Building, Atlanta, Ga.

T.

A Singeing Machine that's invaluable for all kinds of Cotton, Woolen and Worsted Goods



Note its many special advantages

The face and back of cloth can be singed at same operation.

Extreme facility of working, as the cloth is always seen by the operator, and the flame can be removed and machine stopped instantly, thus avoiding any chance of damaging the goods.

Two pieces can be singed at one time in the same machine. The width of the flame is limited exactly to the width of the goods, thus preventing any waste of gas.

Compressed air is delivered into a large receiver, and the gas and air mixed at a uniform pressure, insuring a steady and perfect flame.

The combustion being complete, not the least trace of soot can be found even on the most delicate goods.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

BLEACHING, DYEING, DRYING AND FINISHING MACHINERY FOR SILK, COTTON AND WORSTED FABRICS.

The Camless Winder

16,048

Spindles sold in three years.

An UNPRECEDENTED RECORD, which to any fair mind must denote IMPROVEMENT, and PROMOTE INTEREST.

The

Camless Increased Taper Cone

is unquestionably a factor in the machine's success

As **LEADERS** not **FOLLOWERS** of this system, we INCREASE the angle of the cone without changing SHAPE OR SIZE of pasteboard core.

RESULT

MORE yarn and **LESS** hole

Think this over.

Lowell Machine Shop, Lowell, Mass.

Two New
Large Size
Spinning Spindles.

We make

Draper,
Whitin,
McMullan

and other
types of

Spindles;

also

Northrop Looms,

Twisters,
Warpers,
Spoolers,
Reels,

Banding Machines,

etc., etc.

Draper Company,
HOPEDALE,
MASS.

THE EMPHATIC SUCCESS OF OUR "IDEAL" AUTOMATIC LOOM IS DUE TO SEVERAL SALIENT POINTS OF SUPERIORITY OVER ALL COMPETITORS:

1st. The ease and smoothness with which they start up.

2d. The acknowledged superiority of the cloth woven.

3d. Simple and thoroughly mechanical construction, assuring freedom from the constant breakage and expensive repairs attending other automatic looms.

4th. No special bobbins, shuttles or other expensive parts.

5th. Ability to use cop or bobbin filling interchangeably.

6th. Superiority of warp stop motion which does not break or fray the softest yarn.

7th. Of the thousands in operation not a single bobbin or crank shaft broken.

IN PROOF OF CLAIMS WE POINT TO THOSE MILLS FORMERLY USING OUR COMPETITORS' LOOMS THAT ARE NOW USING OURS.

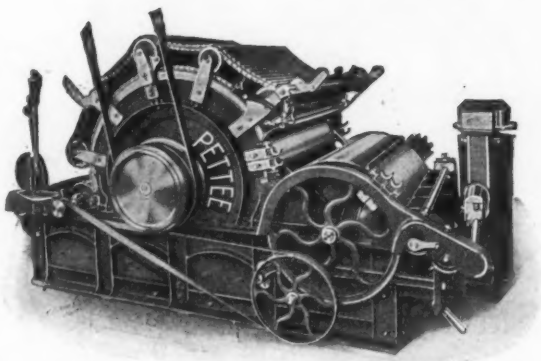
The Stafford Company

Readville, Mass.

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

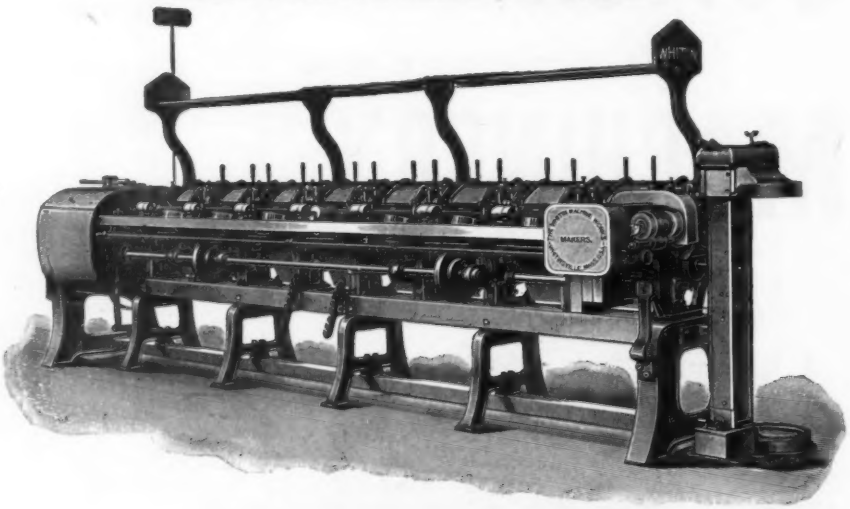
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples nnd Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

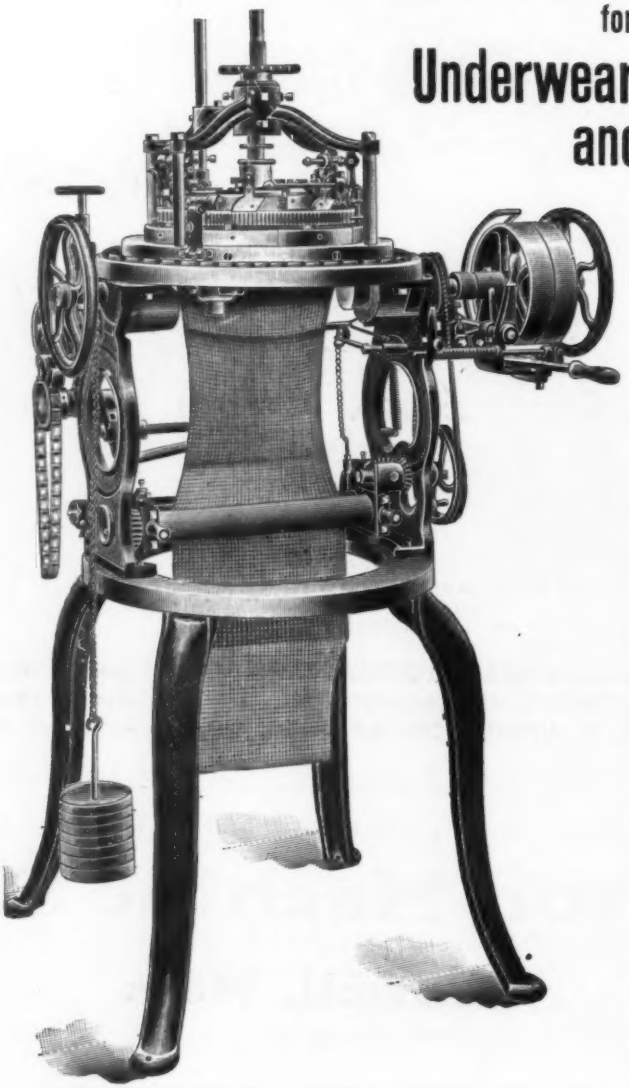
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

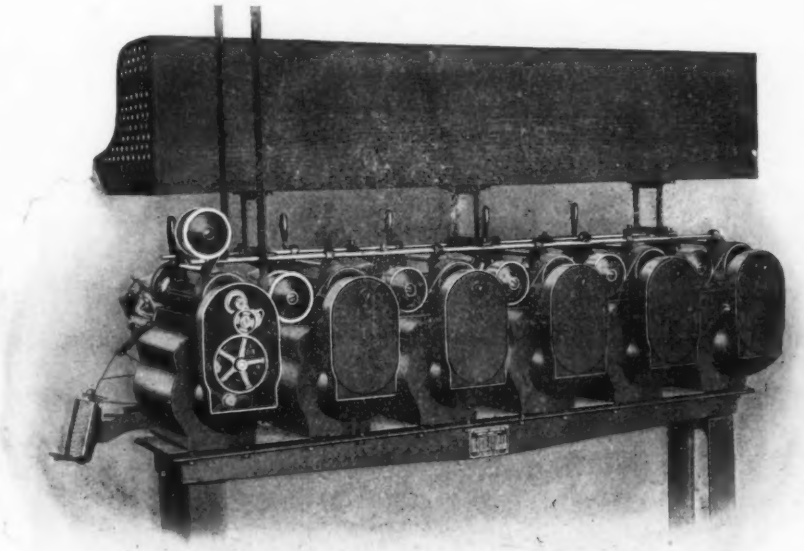
A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

The Nutaper Cone

is wound on correct principles because, having uniform taper throughout,

A. the yarn is not packed hard at the apex and soft at the base, and

B. the yarn near the tube, which owing to decreased "balooning" causes trouble in knitting from ordinary taper, delivers without a catch.



No. 50 "fixed-gain" device insures correct spacing.

Universal Winding Company

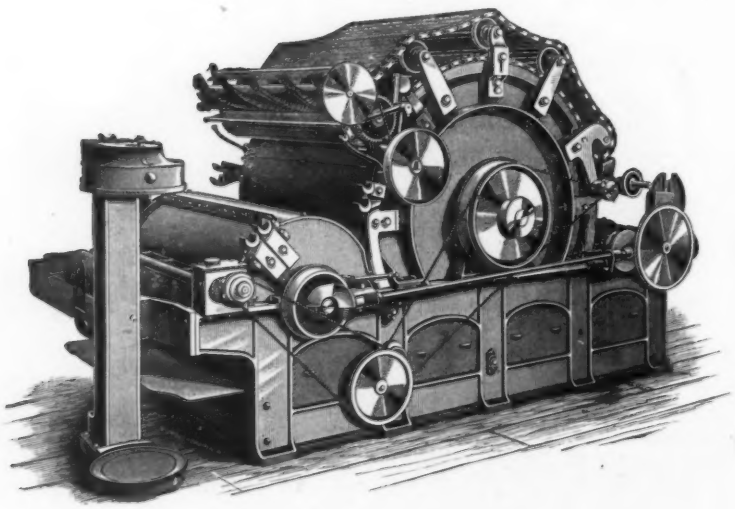
BOSTON

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

INCLUDING

Plain and Fancy Silk Looms

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENT

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

TEXTILE MACHINERY ASSOCIATION, LTD.

Flax, Hemp and Jute Machinery.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

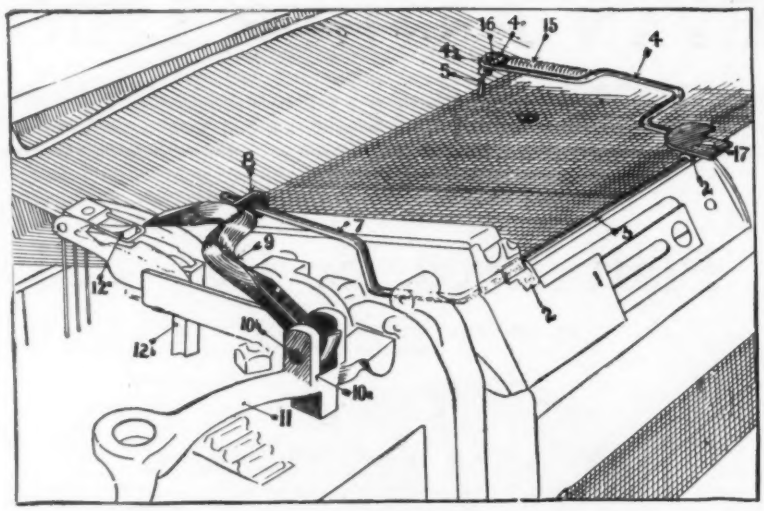
JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SON'S,
Card Clothing for Woolen and Worsted.

DRONSFIELD BROS'.

Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

CLAYTON & BENTLEY



Automatic Thin-Place Preventer.

AUTOMATIC IRON BREAST BEAM LOOMS being the principal market for Thin-Place Preventers we here illustrate our model which has been adopted by a large number of Southern mills for this class of loom. Older models of AUTOMATIC LOOMS (Wood Breast Beams) require slightly different construction, but our device for this Wood Breast Beam Loom gives the same complete satisfaction as the device here illustrated is giving on *thousands of Iron Breast Beam Looms*.

Over 18,000 Sold in the South in the First Eight Months.

When properly adjusted this device is GUARANTEED to detect and PREVENT THIN PLACES, without tearing the cloth.

WITHOUT EXPENSE TO YOU we will equip a few of your looms and let the device do its own talking.

SALESMEN NOW IN THE EAST.

MANUFACTURED BY

CLAYTON & BENTLEY COMPANY,

P. O. Box 624 ATLANTA, GEORGIA

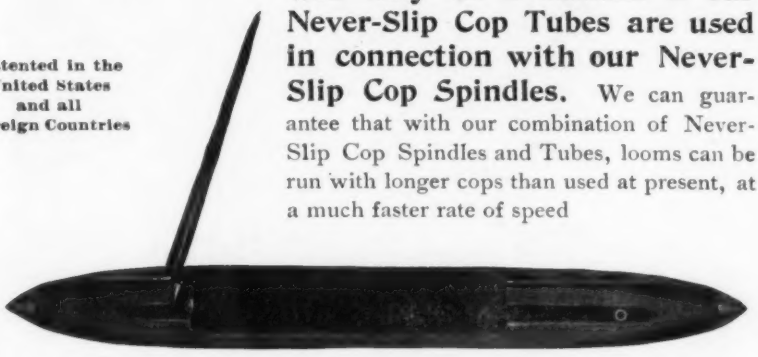
Shuttles for all Textile purposes and Sundry Special Loom devices

Never=Slip Cop Spindles and Tubes

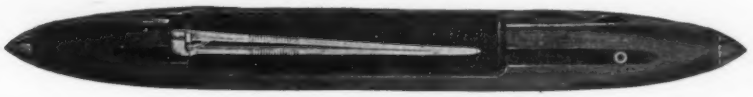
Never-Slip Cop Tube
Patent applied for

Patented in the United States and all Foreign Countries

Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed



Shuttle with Spindle Raised
U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending



Shuttle with Spindle Lowered.
U. S. Patents: 778851, Jan. 3, 1905; 79611, May 23, 1905; other patents pending

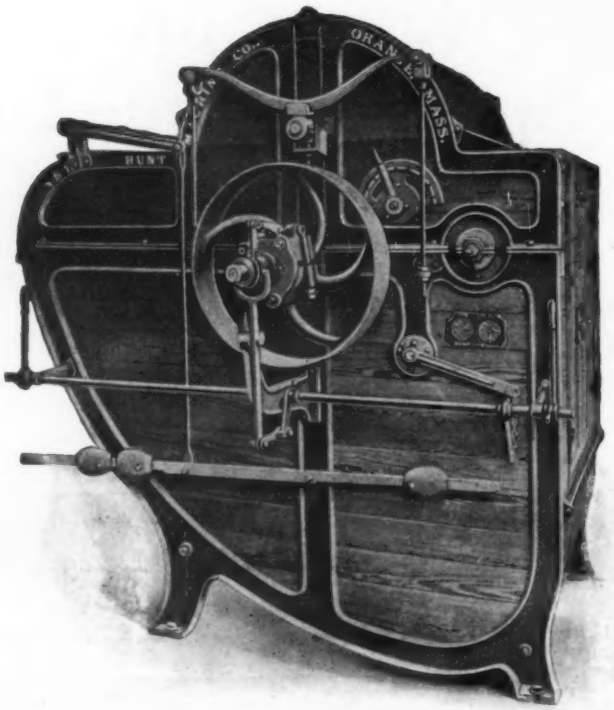
Write for Catalog

American Textile Specialty Machinery Co.

363-373 Rider Avenue, New York City
NEAR MOTT AVENUE SUBWAY STATION

Electric and Automatic
Warp Stop Motion for Silk, Wool and Cotton
Simplicity! ***Perfection!***

Rodney Hunt
MACHINE CO.
ORANGE MASS.



RODNEY HUNT-TYPE SH-FULLING MILL

Less cost to operate—by—more efficient design
Less first cost—by—more modern production
Less repairs—by—superior construction
Special Circular No. 301 tells why it has MORE CAPACITY and gives BETTER RESULTS
SOLD ON TRIAL
It will pay to investigate our

TEXTILE WET FINISHING MACHINERY

RODNEY HUNT MACHINE CO.

Branch Office: 70 Kilby St., Boston. - Main Office and Works: Orange, Mass.

JAMES HUNTER MACHINE CO.

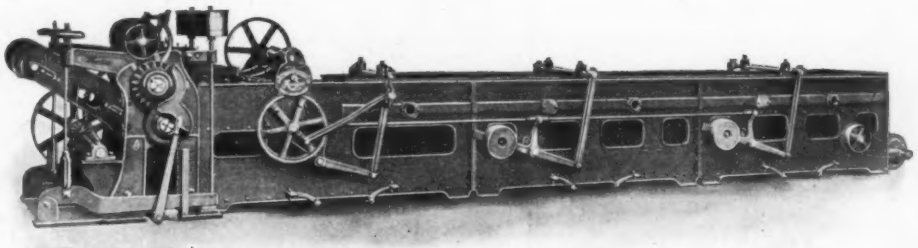
NORTH ADAMS, MASS., U. S. A.

Wool Washers. *Bulletin 54*

The Hunter

MODEL D

WOOL WASHER



Parallel Rake.

Not "A Has Been." Not "A Going To Be"
but a present day success.

Bowls 36″ or 48″ wide; 16-24-32 and 40 feet long.

Better work and more of it.
Large Settling Bowl giving clean scouring liquor.

Self Contained Flushing Appliance.

Better investigate.

Jacob K. Altemus is

Able to supply the best

Cop Winding Machinery

Or Hosiery Winders and more in particular

Bobbin Winders,

The Greatest Bobbin Winder for Skeins Ever Built.

Keep in mind that I

Always produce machines that are right

Letting nothing go out

That is not satisfactory before delivery.

Every

Manufacturer should investigate warping and beaming machinery, warp splitting as well,

Upright Spoolers, Quillers, Warpers, Twisters, etc.

Send for full information and prices.

Textile Machinery

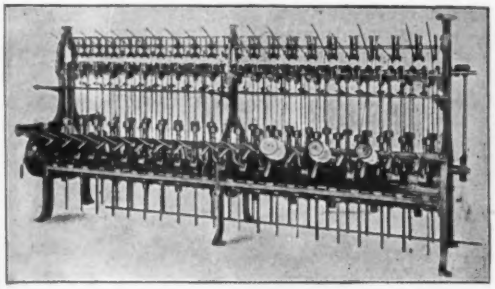
2824 N. 4th St., Philadelphia, Pa,

OSWALD LEVER CO.

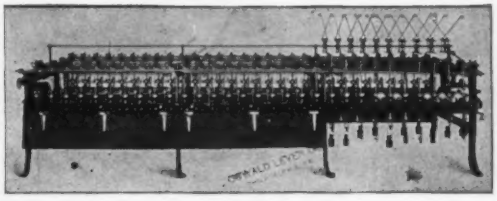
(Formerly LEVER & GRUNDY.)

MANUFACTURERS OF TEXTILE MACHINERY AND SOLE MAKERS OF OUR PATENTED SPECIALTIES IN THE UNITED STATES.

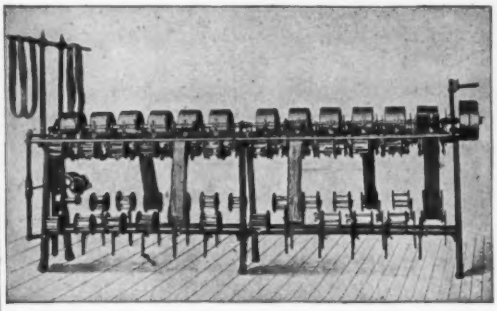
Conical and Parallel Tube Winding Machines; Warping Machines and Creels; Brass Bobbin Winding and other Machinery for lace mills; Chenille Cutting Machines, Sectional Warping Mills, Beaming Machines, etc.



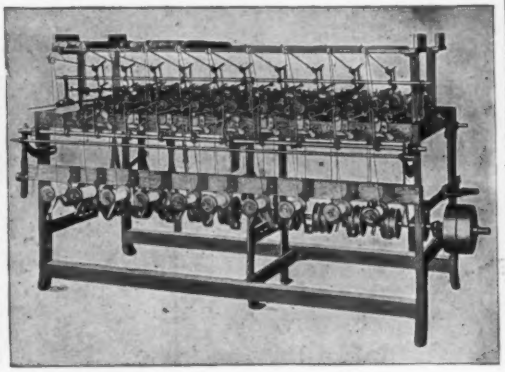
Vertical Spindle Gear Driven Winder, as used by all manufacturers of heavy duck, jute, cotton bagging and carpets.



Silk Winder to wind on Quills, Paper Tubes or Butts. The finest of cotton or silk.



Pressure Drum Spooling Machine. This machine is adapted for spooling any kind of yarn, whether from mule cops or skeins.

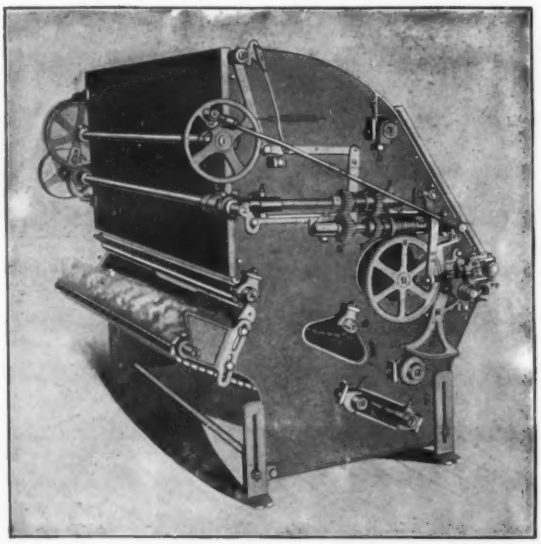


This Machine may be arranged to wind from skeins, spools, cones, or any kind of spinning bobbins. Most suitable machine for cotton or woolen blankets.

Cop Winding Machines for butts to weave from outside; Filling Bobbin or Quill Winding Machines; Vertical Spindle Spooling Machines for Silk, fine cotton, wool and worsted; Variable Speed Bobbin Machines for large bobbins used in knitting mills; Dresser Spooling Machines; Reeling Machines.

Lehigh Ave. and Mascher Sts., PHILADELPHIA, PA., U. S. A.

THE FISHER PATENT CARD FEED



Write Us For List of Mills Where Machines Are Used.

Woonsocket Machine and Press Company

WOONSOCKET, R. I.

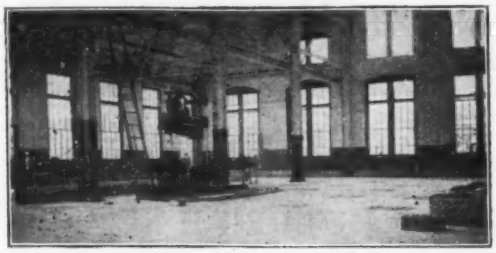
CELL DRIER MACHINE CO.
TAUNTON, MASS.

THE CELL DRIER is the most efficient machine on the market for drying yarn and cloth of all grades and weights.

An 8-foot Cell Machine Equals a 55-foot Cylinder Machine.

Simplicity.

Economy of First Cost, Space, Labor and Power.



IN THE NEW PLANT OF THE CELL DRIER MACHINE CO AT TAUNTON, MASS.

Best Materials and Workmanship.

Freedom from Repairs.

Heavy fabrics may be dried at 125-yard speed. The company is now installed in its new and fully equipped manufacturing plant at Taunton, Mass., and is in a position to take care of orders promptly.

The Cell Drier has come rapidly into favor, replacing the cumbersome cylinder machines and affording marked economy in cost of installation and operation, and in floor space covered. It utilizes steam to the highest advantage and without complicated piping.

It operates with positively driven rolls, has easily adjusted tension and does not strain the goods.

Write for photographs of Cell Drier installations with full particulars and estimates.

THE CELL DRIER

FORSYTH BRAIDED HOSE

for Water, Steam, Air, Gas, etc.

SEAMLESS RUBBER TUBE. SPECIAL COTTON YARNS OF GREAT STRENGTH. HIGH GRADE RUBBER THROUGHOUT.

Each ply is a circular braided fabric, seamless and complete in itself. All of the yarns are thoroughly coated with rubber, thus protecting them from mildew and decay.

"FORSYTH" BRAIDED HOSE is immensely strong—Extremely flexible—Practically non-kinkable—Unexcelled for durability. Highly satisfactory and economical from the standpoint of the man who uses it or the one who pays the bills.

BOSTON BELTING COMPANY · ESTABLISHED · 1828 · TRADE MARK

RUBBER BELTING

for the transmission of power or conveying materials.

FIRE HOSE—AMERICAN UNDERWRITERS Trade Mark

Cotton, rubber lined, for outside or yard use.
Linen, unlined, for inside use.

PACKINGS in great variety.

RUBBER COVERED ROLLERS

Adapted for all textile mill uses.

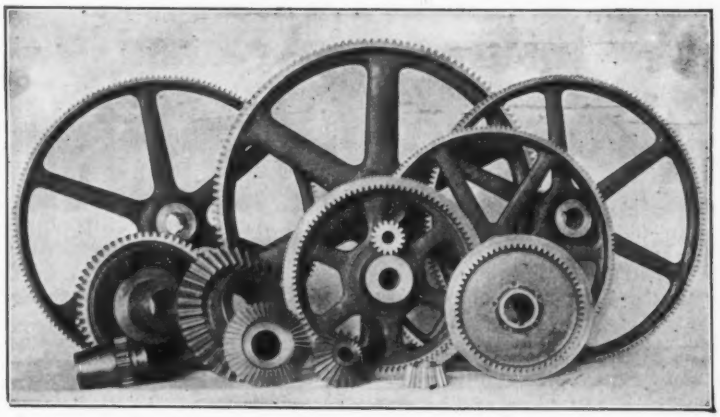
MANUFACTURED BY

BOSTON BELTING CO.

JAMES BENNETT FORSYTH, Mfg. Agt. and Gen'l Manager.

BOSTON 256-260 Devonshire St. | NEW YORK 100-102 Reade St. | BUFFALO 90 Pearl St.

PHILADELPHIA BALTIMORE ATLANTA MOBILE NEW ORLEANS MEMPHIS
CINCINNATI NASHVILLE CHICAGO MILWAUKEE CLEVELAND



Accurate Metal Gears

Lots of people (on account of the name of our company) do not understand that we make metal gears. The fact is that we have one of the largest and best equipped plants in the country for turning out accurate gears of any material and in any quantity. We have earned a reputation for the excellence of our workmanship of which we are justly proud and our prices are interesting, quality considered. We solicit a chance to bid on your requirements in our line.

The New Process Raw Hide Co.
Syracuse, N. Y.

Insurance Against
Loss of Profits

Is there a fly-wheel in your mill?

Suppose it should burst and demolish the building and delicate machinery?

Machinery cannot be replaced quickly. In fact, it usually takes months to replace. Where it is of a special type, or designed for a special purpose, the delay is of course much greater.

Meanwhile what is happening to your business?

Your plant is idle; no goods can be made. Just think what an enormous loss you will suffer if the output of your mill is even as low as $150 per day.

Why not protect yourself by insurance?

Maryland Casualty Company is now covering this loss by special endorsement attached to its Fly-Wheel Insurance policy. The indemnity payable under this indorsement is not deducted from the face value of the policy, but is a separate insurance which the Company pays in addition to the face value of the policy. This is really the greater loss from fly-wheel explosion. Protect yourself in time.

Write us for full particulars, giving amount of insurance desired, number and diameter of the fly-wheels and pulleys you want covered. We will quote rates by return mail. Ask for form 237–G descriptive of this insurance.

Maryland Casualty Company
Baltimore, Maryland

The Maryland continues to sell, at fair rates the Standard form of liability policy, which is as good as the best sold by any other company.

The Company also writes Burglary, Sprinkler Leakage, Teams, Elevator, Personal Accident, Steam Boiler, Water Damage, Physicians' Defense, Plate Glass, Disability, Automobile, Health, Fly-Wheel, and all other classes of casualty insurance.

Assets over
$3,691,447.50

MARYLAND CASUALTY COMPANY
MERITS COMPLETE CONFIDENCE

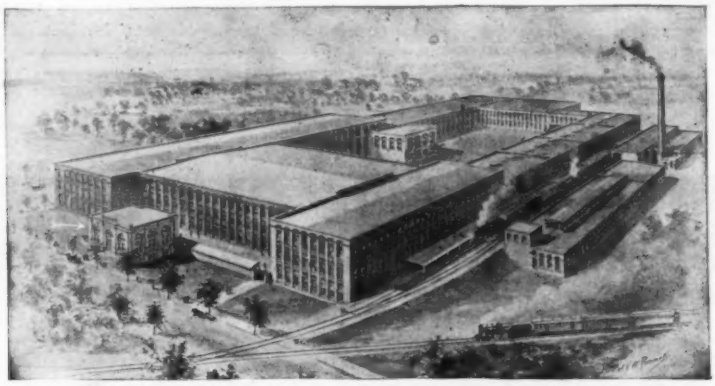
Surplus to Policyholders
$1,722,046.77

PRACTICAL FIRE PROTECTION

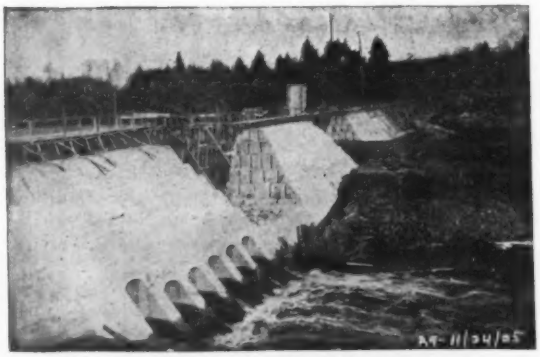
If you want your mill buildings properly protected against the fire hazard, thereby obtaining the lowest insurance rates, you must have a supply of water which is instantly available under high pressure and absolutely independent of the successful or immediate operation of pumps or other machinery. The old method of storing such a supply was by wood tanks, generally built on top of buildings. As these tanks are short lived they soon become, themselves, a menace to the building instead of a protector. The sudden bursting of such a tank has often done as much damage as a fire. The up-to-date method of storing water is by means of a steel tank on a steel tower. We make a specialty of the design, manufacture and erection of these tanks of any desired capacity, in any part of the country, to meet any local conditions. Our tanks are recommended by the Factory Mutual Insurance Companies and endorsed by all of our past customers. We have built about seven hundred towers and tanks in all parts of the country, about 50 of which have been erected for Textile Mills. Every one of these is giving satisfaction. Write for booklet No. 7 which gives a list of all our customers with whom we invite you to correspond. The cut shows a tank which we built for the Belton Cotton Mills, at Belton, S. C. The large tank is kept full at all times for fire protection; the small one supplies water for use in the buildings.

Chicago Bridge and Iron Works

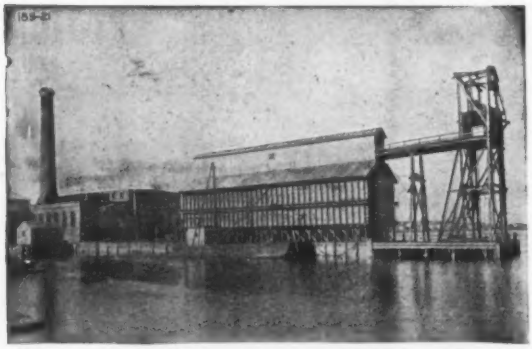
105th and Troop Sts. Chicago, Ill.



Plant of the Columbian Rope Company, Auburn, N. Y. Built by us in 1903. Dean & Main, Engineers.
In 1907 a Repeat Order for an addition 585 ft. long was awarded us.



Concrete Dam, over 1900 feet long, at Sprague's Falls, Maine.
A Repeat Order from Geo. F. Hardy, Engineer.



Plymouth & Brockton Street Railway, Mass.
This station produced electricity three months after we commenced work.
A Repeat Order from Stone & Webster, Engrs.

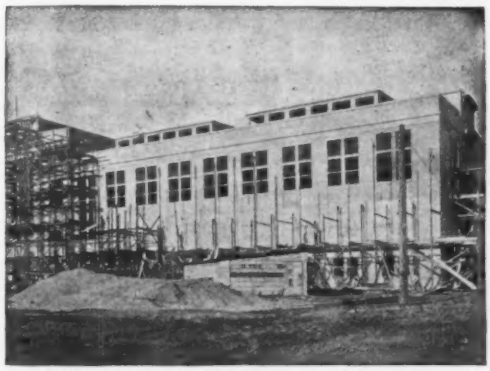
These pictures show, to some extent, the diversified character of our work, and the wide field covered by our operations.

It will be noticed that the contracts illustrated here include practically all kinds of architectural and engineering construction. We have built many mills, factories, power houses, dams, canals, hotels, office buildings, residences etc., in various sections of the country and in Canada.

Our wide experience and knowledge of methods enables us to execute, with our own forces, much work that ordinarily would be sublet, thus saving the owner the subcontractor's profit. By co-operating with the owner and architect we are frequently able, under the Gilbreth System, to make large reductions in cost. We are always prepared to take hold of a new job quickly, or to meet any emergencies that may arise during the prosecution of the work. If steel is scarce we know how to build of concrete. If cement is too costly, we use bricks, and save

FRANK B. GILBRETH, General Contractor

34 West 26th St., New York 604 Mission St., San Francisco



Seattle Electric Company, Georgetown, Washington.
Reinforced Concrete throughout, including Roof Girders 64 feet long.
A Repeat Order from Stone & Webster, Engineers.

money in laying them by using the Gilbreth Patented Scaffold. If wood piles are scarce we make our own patented corrugated concrete piles.

On account of the wide area covered, we are able to keep well-informed regarding the material market and labor conditions. Being large buyers of material we are assured of receiving the best attention and lowest prices from supply-men.

Most of our work for many years past has been "speed work," and, as a result, our organization has been thoroughly trained to secure speed and economy without sacrificing quality. Neither effort nor expense has been spared to make it the strongest and most efficient organization of its kind.

The fact that nine-tenths of our work for several years past has been on repeat orders from old customers proves conclusively the truth of our assertions regarding the benefits derived from the Gilbreth System.

Reinforced Concrete Factory Building.
S. L. Allen & Co., Philadelphia, Pa.
Dodge & Day, Engineers.

Champion Coated Paper Company, Hamilton, Ohio.
Structural Steel in 900-foot long Mill Building.
A Repeat Order from Geo. F. Hardy, Engineer.

St. Croix Paper Company, Sprague's Falls, Maine.
This contract included the construction of enormous pulp and paper mills, dam, power house, stores, residences, etc.—a complete industrial town.
A Repeat Order from Geo. F. Hardy, Engr.

We will welcome an opportunity of explaining our methods in detail to any owner, architect or engineer who has construction work of any kind in view.

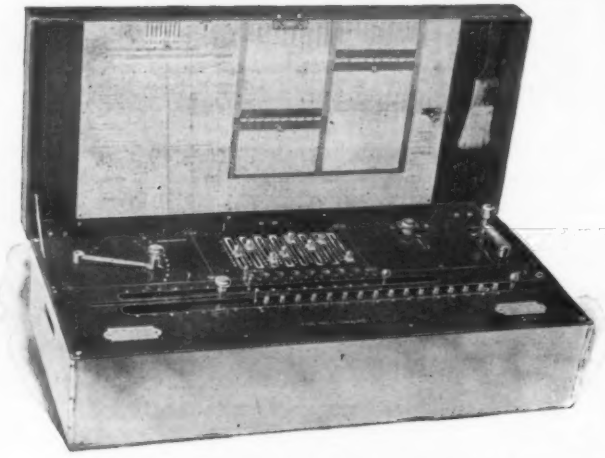
FRANK B. GILBRETH, General Contractor

34 West 26th St., New York 604 Mission St., San Francisco

The machine with a Brain—Nothing else like it in the world.

"The Millionaire" Calculating Machine

Multiplies, Divides, Adds, Subtracts



Giving infallible results with wonderful speed and and minimum of trouble.

Example:

18,769,423
x
23,769,814
Equals:
446,145,693,597,322.

Result obtained in 9 to 10 seconds with only eight turns of the crank —not possible with any other machine known.

In use by Governments and the Greatest Business Institutions in the Universe,

saving its cost many times over every year and so increasing the output of results as to literally accomplish the work of three days in one,

A bright office boy can accomplish more with it than two or three expert accountants can without it.

The Millionaire Calculating Machine works out every possible calculation in the four rules of arithmetic, and does it with marvelous speed and unfailing accuracy.

It has fairly earned the title of a "Machine with a Brain." A valuable time-saver, labor-saver and money-saver in Textile Mills, Government, Railway and Insurance offices; in State Insurance Departments; Treasurers', Registrars', Auditors', and Tax offices; in census departments, ship-building concerns, engineering operations, contracting offices, Banking and Trust Companies, in commercial houses for *Bill Extensions* and for every other form of calculation, simple or compound.

Simple and durable in construction—easy to learn—easy to operate.

It has stood the test of time.

Our list of users is our best advertisement.

Take the first step in cutting down your office expense to-day by sending for free Booklet.

W. A. Morschhauser, Sole Agent for North America

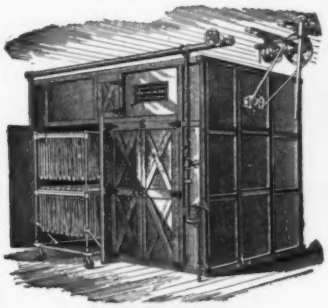
Metropolitan Life Building, New York

"HURRICANE" DRYERS AND FANS

For Wool, Cotton Stock, Yarn, Stockings, Underwear, Etc.

BELT DRIVEN AND MOTOR DRIVEN

Power Screw, Hydraulic and Lever **Presses**



Truck Yarn Dryer.

"Hurricane" Fan, Style No. 2. Write for Catalogues.

COMPLETE EQUIPMENTS FOR DYEING, SCOURING, BLEACHING, CARBONIZING, OXIDIZING, CHROMING, Etc.

PHILADELPHIA DRYING MACHINERY CO.

6721 Germantown Ave., Philadelphia, Pa.

TO SHORTEN OR LENGTHEN A BELT WHEN IT IS LACED WITH COIL WIRE LACING BY THE

JACKSON BELT LACER

Simply draw out the rawhide pin or other fastening, insert or remove a section such as is shown, and you're ready for any emergency.

Note how even the lacing is. It is just the same on both sides, even with surface of the belt—it makes a perfect hinge that passes over the smallest pulley without slipping, pounding or strain.

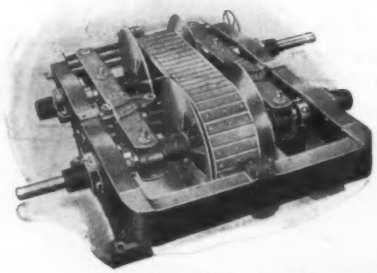
A 5" belt can be laced in this manner in three minutes, and the lacing costs only one cent—(larger belts all the way up to 24" wide in proportion.)

Write for particulars.

BIRDSBORO STEEL FDY. & MACHINE CO.

BIRDSBORO, PA.

"The Reeves" Variable Speed Transmission



Used to regulate the speed of textile machinery such as tenter frames, driers, dyeing machines, printing machines, in fact any machine requiring variable speed.

INCREASES THE OUTPUT TO THE MAXIMUM

BETTERS THE QUALITY OF GOODS

REDUCES OPERATING EXPENSES TO THE MINIMUM

What more could you ask?

"The proof of the pudding is the eating thereof." Try it.

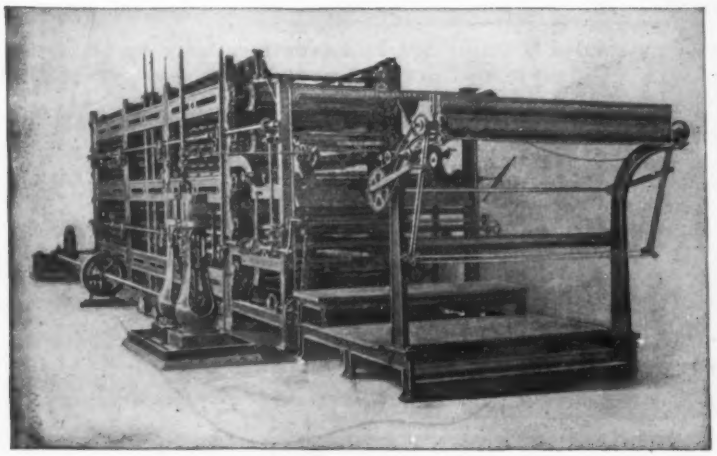
REEVES PULLEY COMPANY
Columbus, Indiana

New England Agents
Cell Drier Machine Company
84 State Street, Boston

New York Representatives
Patterson, Gottfried & Hunter
146-150 Centre Street

TENTERING AND DRYING MACHINES

WITH LOW DOWN FEED. PATENTED FEBRUARY 26, 1895.



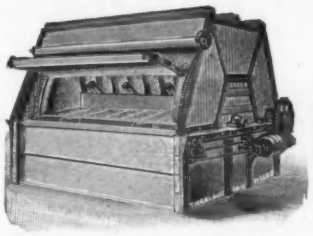
Tentering and Drying Machines on Pipe System. Special Dryers for Heavy Felt Goods. Hot Air Drying and Tentering Machines.

Fulling Mills, Washers, Chinchilla and Whitney Machines, Whipping Machines, Cone Willows, Marsden & Blamire Lap Feed, Dyeing Machines for Piece Goods, Soaping Machines, Wringing Machines, Jigs (Double or Single), Dewing Machines, etc. Crabbing Machines for worsted. Made either single, double or triple.

MANUFACTURED BY

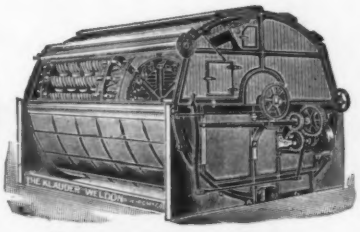
D. R. KENYON & SON, Raritan, N. J. Successors to KENYON BROS.

Long Distance Telephone—Somerville 21.



RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTHS' TRIAL
YOU
TAKE
NO
RISK

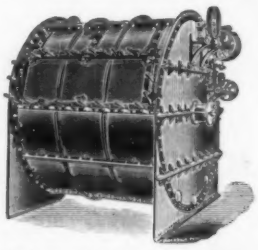


SKEIN AND SLUBBING MACHINE.

THE KLAUDER-WELDON DYEING MACHINE COMPANY

P. O. Box K, AMSTERDAM, N. Y.

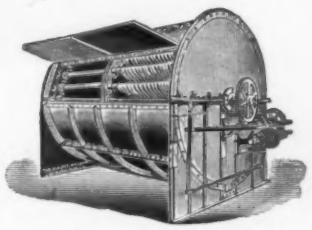
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



SULPHUR HOSIERY MACHINE.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

LAWSON'S

BRANCH OF

Fairbairn Lawson Combe Barbour, Ltd.

Hope Foundry. LEEDS, England

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery

for the Manufacture of

Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machine.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

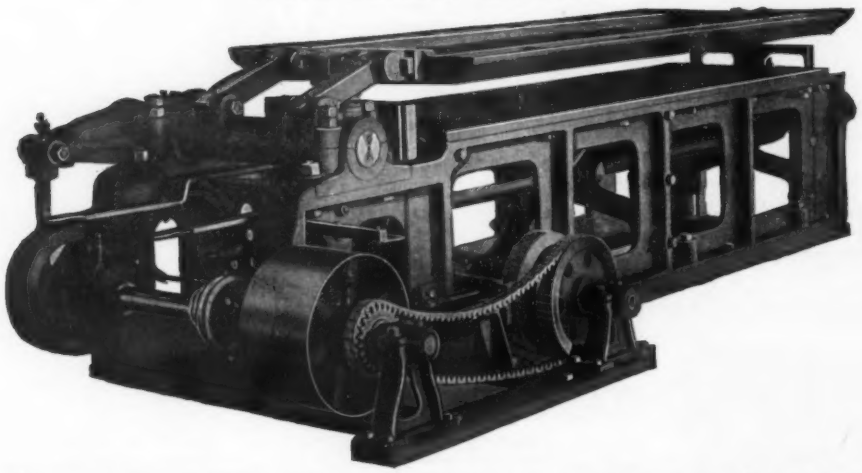
Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

Complete Planes and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

Farrel Foundry & Machine Co.

ANSONIA, CONN.



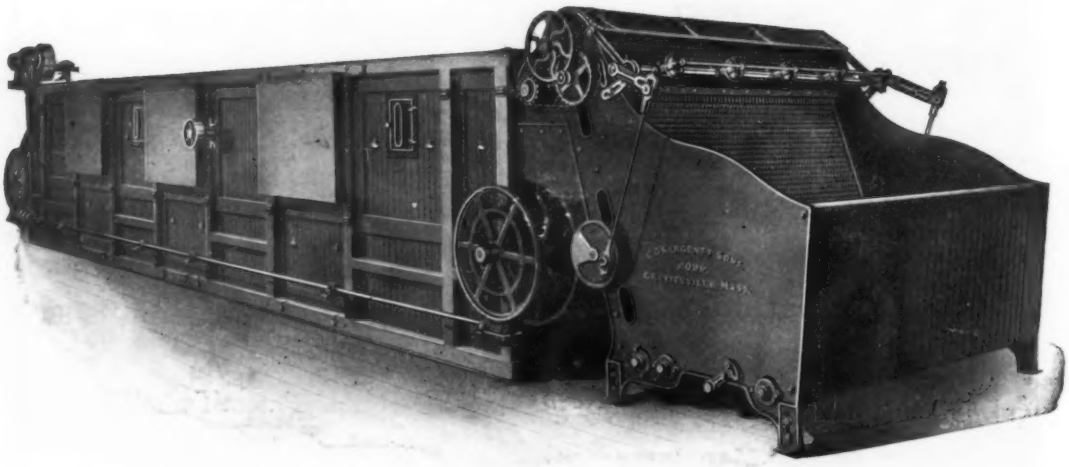
SINGLE AND DOUBLE FELT HARDENERS.

Chilled and Soft Iron Rolls. Heavy Transmission Machinery.
Machine Moulded and Machine Cut Gearing, to 20 ft. diameter, Etc., Etc.
Heavy Castings, in Gray Iron or Semi Steel.

C. G. SARGENT'S SONS

CORPORATION

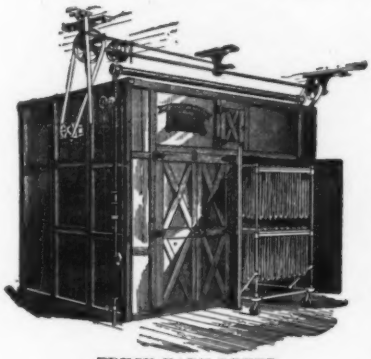
GRANITEVILLE, MASS.



BUILDERS OF

Stock Dryers, Wool Washers, Wool Dusters, Carbonizing Plants, Burr Pickers, Etc.

"20th CENTURY" MACHINERY

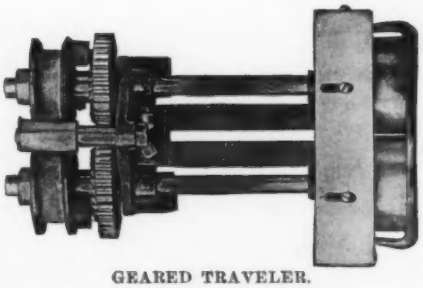


TRUCK YARN DRYER

Dryers for Wool and Cotton Stock, Yarn, Stockings and Underwear.

Carbonizers, Yarn and Wool Scouring Machines.

Ventilating Fans, Bleachers,



GEARED TRAVELER.

We also manufacture Kershaw's Geared Traveler and Improved Web Feed.

Garnett Machines and Pickers. Reclothing or furnish New Metallic Toothed Cylinders and Feed Rolls.

DYEING MACHINES, TOM TOMS, CHROMING, WASHING AND OXIDIZING MACHINES.

AMERICAN DRYING MACHINERY COMPANY,

19th AND WESTMORELAND STREETS, PHILADELPHIA, PA.

Patented in the United States and Foreign Countries.

SEND FOR BOOKLET.

The American

WROUGHT STEEL

PULLEY

Is a parting PULLEY and can be applied without stripping the shaft.
It is Light, STRONG, and lasts a lifetime.
It clamps to the shaft perfectly — keys and set-screws superfluous.
Interchangeable metal Bushings to fit shafts of different sizes.
Particularly adapted to TEXTILE manufacturing.

Sold by the Leading Supply Houses all over the WORLD.

The American Pulley Co.,

29th and Bristol Streets, : : PHILADELPHIA, PA.

More and better product.

The even distribution and automatic regulation of humidity by the Bell System insures uniform atmospheric conditions that every textile worker desires and heretofore has found hard to secure. As a direct result of this steady and moderate moistening, the fiber is rendered more pliant and adhesive, machinery runs smoothly, output is increased and quality improved. The betterment of ofttimes troublesome conditions together with the purification of the air enabling the operatives to work with greater energy makes the Bell System a sure profit increaser.

Write for full information.

VENTILATION & HUMIDIFICATION
BELL PURE AIR AND COOLING CO.
TRADE MARK

Purifies and delivers the air, carrying moisture as invisible vapor, just as it is found in nature.

Bell Pure Air & Cooling Co., 97-103 Cedar St., New York.

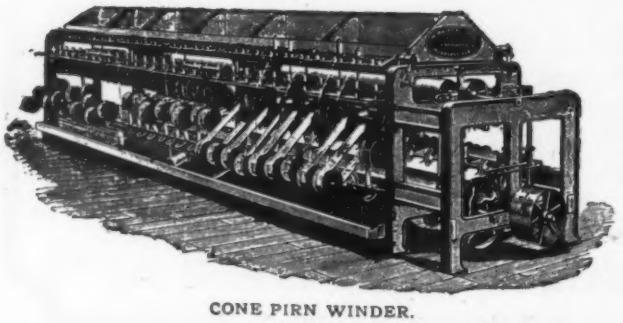
Telegraphic Address: "WHITELEY, HUDDERSFIELD." Nat. Telephone, 598 and 599.

Wm Whiteley & Sons Ltd.

LOCKWOOD, HUDDERSFIELD.

MANUFACTURERS OF

Woolen Machinery



CONE PIRN WINDER.

Makers of all descriptions of Tentering and Drying Machines.

Moore & Whiteley's Patent Wool and Cotton Dryer.

Crabbing or Winding-on Frames.

Cross Raising Machines, Wool Scouring Machines,

Hydro Extractors. Warp Sizing.

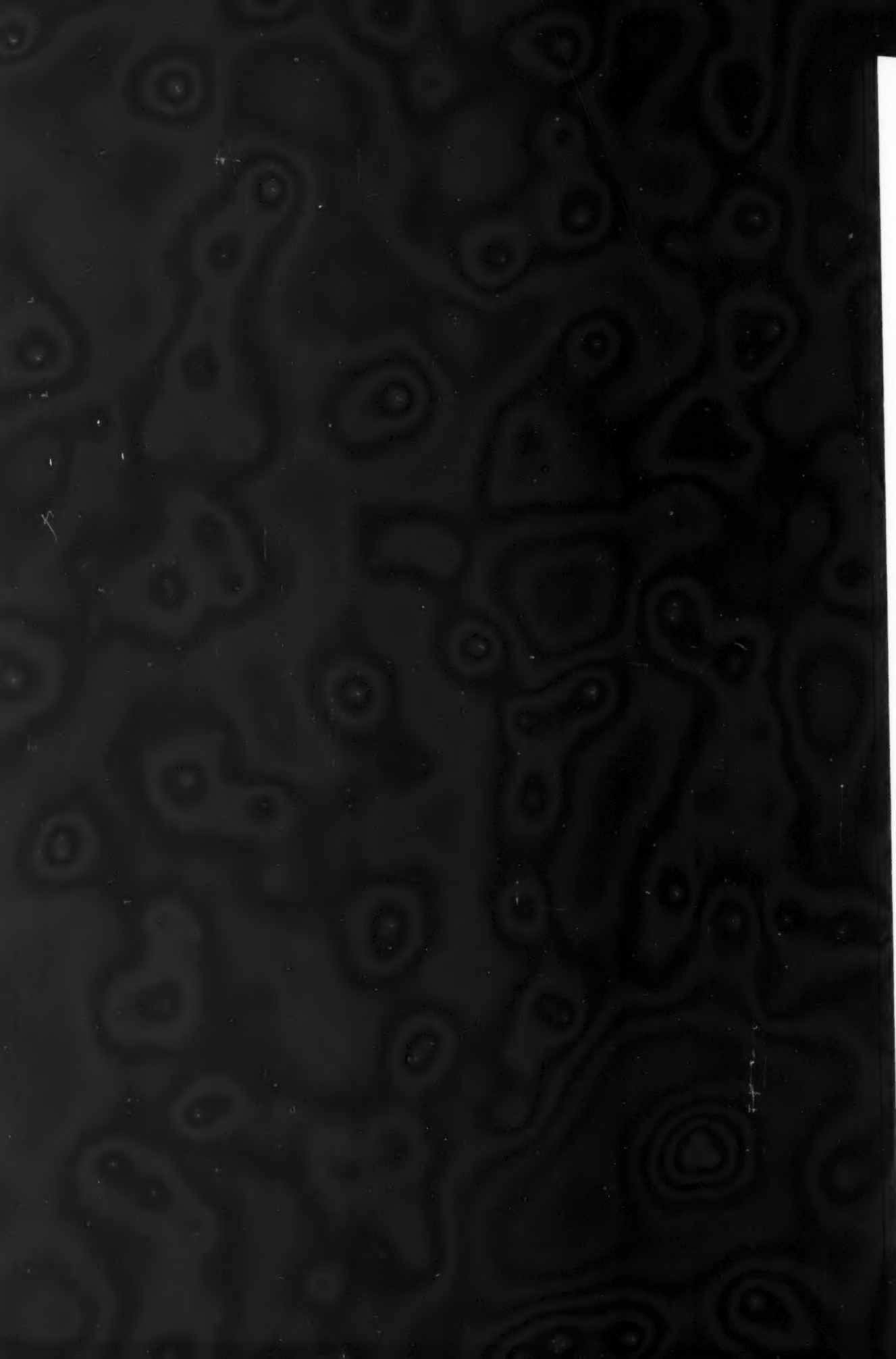
Cool Air Drying and Beaming Machines.

Warping Mills with Patent Sectional Dividing Apparatus.

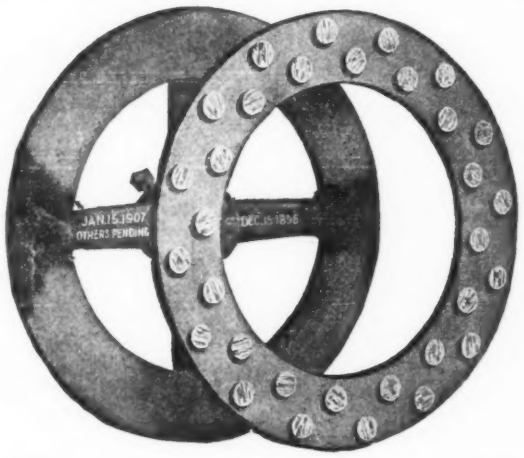
Self-Acting Mules. Bobbin or Pirn Winder, &c., &c.

Mercerizing Machinery.

Second-hand Tentering Machines in good repair at low prices.



Thousands of Looms



in the
best mills
have been
equipped
with
"Ready-to-Use"

Cork Insert Fibre Rings

Thousands more will be.

They transmit more power, pick up quicker, are not affected by oil, water or dust, and last much longer than leather-facings.

Require no repairs Need no cleaning

That's why

Cork Inserts are used in these mills.

American Woolen Co.	Amoskeag Mfg. Co.	Comins & Co.	Warren Woolen Co.	Andrews Mill Co.
Wood Worsted Co.	Liberty Silk Co.	New England C	Appel Bros. Mfg. Co.	Phenix Silk Mfg. Co.
Washington Mills	Sterling Mills	Arlington Mills	U. S. Bunting Co	Glendale Woolen Mill
Burlington Mills	Shirreffs Worsted Co.	Geo. E. Kunhardt	Colwell Worsted Mills	Standard Silk Co.
Weybosset Mills	Wm. Tinkham Co.	Chelsea Fibre Mills	Tremont Worsted Co.	Pequea Mills
Vassalboro Mills	Geo. H. Gilbert Mfg. Co.	Scherr Bros.	Rock Mfg. Co.	Vernon Woolen Co.
Puritan Mills	Brightwood Mfg. Co.	American Felt Co.	Excelsior Mills	Plainfield Woolen Co.
Saranac Mills	Tioga Silk Co.	Givernaud Bros.	R. & H. Simon	Altamahaw Cotton Mills
Assabet Mills	Pacific Mills	Oneko Woolen Co.	Oakland Worsted Co.	Landenberger Mfg. Co.
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Intervale Mills Corporation Forstmann-Huffmann Co. Kezar Falls Woolen Mfg. Co. Greenwood Worsted Mills
Cleveland Woolen Mills J. Capps & Sons, Ltd. Webster Woolen Mills Co. Miami Woolen Mills
Waterhouse & Howard S. Slater & Sons Maynard Mills Co.

Cork Insert Fibre Rings are easily attached to looms now in use. at small cost.

14 in. and under, $1.00. Over 14 in. to 16 in. inclusive, $1.25. Over 16 in. special prices.

In ordering, please give outside diameter and width of face.

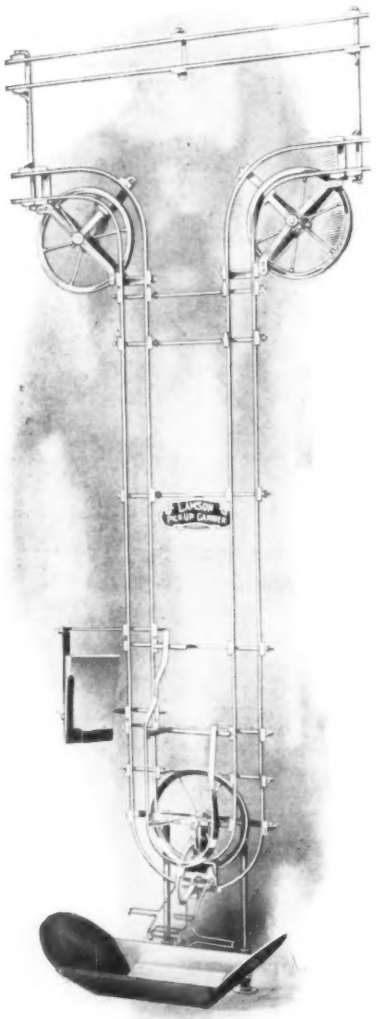
FOR SALE BY

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass., LOWELL MACHINE SHOP, Lowell, Mass.,
WILLIAM ETSWEILER, 230 N. 3rd St., Philadelphia, Pa., H. F. LIVERMORE CO., 85 Pearl St., Boston, or

National Brake & Clutch Co., 16 State St., Boston.

Automatic Conveying Apparatus

FOR MILLS, FACTORIES AND MACHINE SHOPS.



Time and Labor Saving Devices

For carrying messages, orders, tools and merchandise, as

Designed and Built to Order

By us for use in mills, factories and machine shops, ensure

Promptness, Precision and Absolute Safety

Cost far below that of carrying by hand.

Write for full particulars of Lamson devices applied to plants similar to your own. Plans and estimates free of cost.

One of many types of Lamson Conveyors

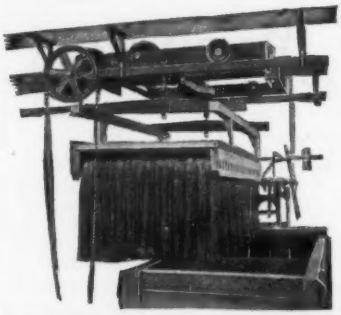
LAMSON CONSOLIDATED S. S. COMPANY,

General Offices, 161 Devonshire St., Boston, Mass. Department Offices in Principal Cities.

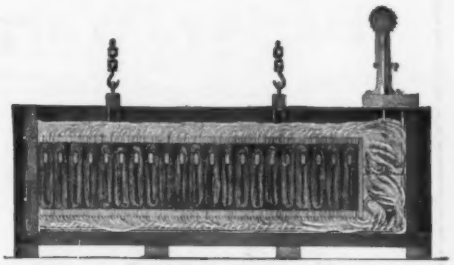
The Hussong Dyeing Machine

Patented Nov. 6, 1900. April 9, 1901. Nov. 29, 1904. June 5, 1906.

THE ONLY MACHINE THAT WILL DYE SULPHUR BLACK SUCCESSFULLY.



This illustration shows our Compressed Air Hoisting Carriage, with 300-pound Yarn Machine Suspended.



Longitudinal Sectional View, showing the circulation of dye liquor through the yarn when in operation.

Points of Superiority Which We Claim for the Hussong Machine.

Durability, Even Dyeing, Saving of Steam, Saving of Dyestuff, Saving of 75% in Labor, Makes No Waste Whatever, Requires but Little Power to Operate, No Friction on the Material, Leaves the Yarn and Slubbing in its Natural Condition.

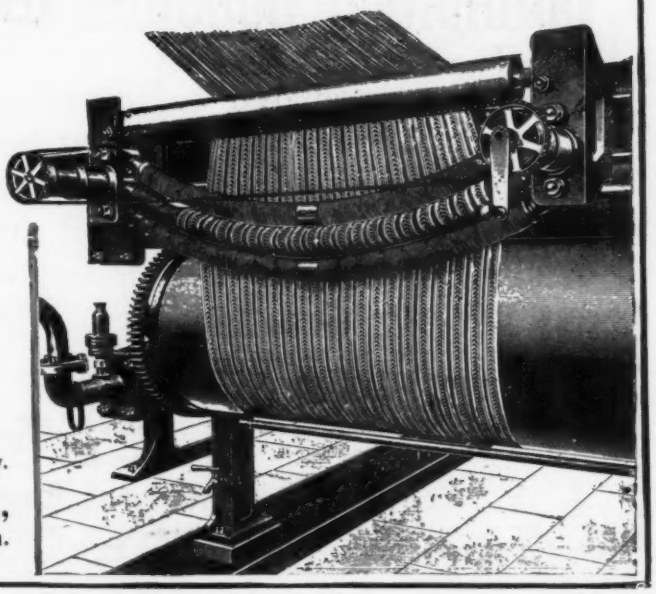
Built by the **American Dyeing Machine Co., Office 609 Pearl St., Camden, N. J.**

BEWARE OF INFRINGEMENTS.

Perfectly Even Tension Both Ways

THIS ideal cloth expander gets the full width of the goods in a most satisfactory way. Can be attached to calenders or cans. Hundreds in use in Great Britain and on the Continent—hundreds more in the United States, with constant satisfaction.

Manufacturers unsolicited say to us, "You have the greatest thing in a spreader ever brought to our attention."



We put them in on trial.
Test it on your own work—'t will pay.

Thomas Leyland & Co.,
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B C
TRADE MARK

Barber Warp Tying Machines

"Enthusiastic regarding efficiency and amount of work done. An average saving of $35.00 per week since installation"—*remark of Southern Mill Superintendent to our Inspector.*

"It shows a saving last week of $91.86"—*what a Northern Mill Superintendent writes.*

"We figure the machine saves us $75.00 a week"—*statement of Northern Mill Superintendent to one of our salesmen.*

The foregoing shows the capability of the Barber Warp Tying Machine. The mills referred to are representative ones, and your mill should enjoy the same measure of economy and productiveness. Barber Warp Tying Machines are working on a wide variety of warps and have shown a saving over former methods wherever installed. Let us arrange an appointment for you at some mill similar to yours. A practical demonstration under every-day conditions will convince you.

BARBER-COLMAN COMPANY

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Reinforced Concrete Mill Buildings

We are prepared to furnish plans, specifications reinforcement details and supervise the construction of textile mills and industrial plants in general. Mill buildings built of this material are cheaper than the regular mill constructed buildings. We have several now under construction.

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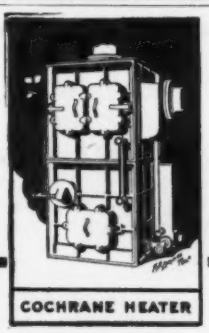
EASTON AND BURNHAM MACHINE CO.

PAWTUCKET, R. I.

REPAIRS FOR RABBETH SPINDLES



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SAVE SOAP.

Coal can be saved in textile plants by using exhaust steam to heat water for washing, dyeing, etc., and also to heat air for ventilating and drying. Exhaust steam contains from 80 to 90% of the heat originally present in the live steam and after all traces of oil have been removed in a Cochrane Separator the exhaust steam may be turned into heating or drying coils or into a Cochrane Heater for the production of hot water.

Besides heating the water, this heater serves as a hot well or receptacle for all pure condensation about the plant, and it further serves to purify raw water by precipitating and settling out the carbonates of lime and magnesia and the impurities in suspension. The carbonates cause that condition of water known as "temporary hardness," and their removal results in a great saving of soap in washing processes and better and more uniform results in scouring and dyeing.

If the water to be used for washing and scouring purposes contains "permanent hardness" a further treatment will be required, since the sulphates of lime and magnesia are not precipitated by heat alone. In such cases we advise the use of our Hot Process System of Water Softening. This is also to be strongly recommended for the sake of the boilers, since it will prevent the formation of hard scale, thereby greatly reducing the coal bill and the expense of cleaning and repairing boilers.

Give us particulars in regard to your requirements for hot water or air, and we shall be pleased to make estimates and plans. Ask for bulletin "13-HP."

HARRISON SAFETY BOILER WORKS,
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Metallic Drawing Roll

Over the leather system before placing orders for new machinery, or if contemplating an increase in production, have them applied to their old machinery

33 Per Cent. More Production GUARANTEED.

SAVES

Roll Covering, Varnishing — *Floor Space, Power,* — *Waste and Wear.*

ONE-THIRD LESS WEIGHT REQUIRED.

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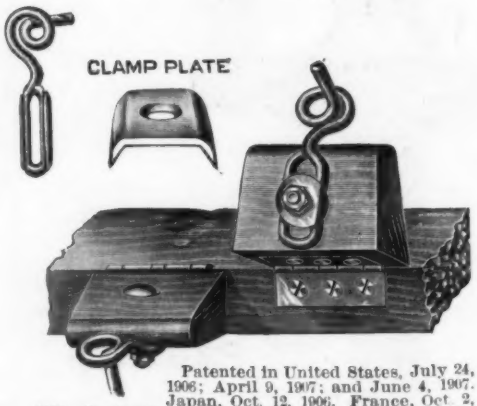
Palmer's Improved Adjustable Thread Guide

This guide supplies an accurate, rigid and permanent adjustment, and is attached to the ordinary spinning frame clapper. It has more merits than any other adjustable guide and at a greatly reduced cost. Perfect adjustment saves broken ends, abnormal wear of the rings, and increases the production and quality. Will soon pay for itself. *Send for free sample and circular.*



Patented in United States, July 24, 1906; April 9, 1907; and June 4, 1907. Japan, Oct. 12, 1906. France, Oct. 2, 1906. England, Sept. 13, 1906. Spain, July 25, 1906. Belgium, July 24, 1906 and Italy.
Patents applied for in the United States, Germany, Switzerland, Austria, Russia, Poland and India.

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Can you afford

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Write us today.

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MECCA TRADE MARK BRAND

for Textile Mills

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Write us for Prices and Samples.

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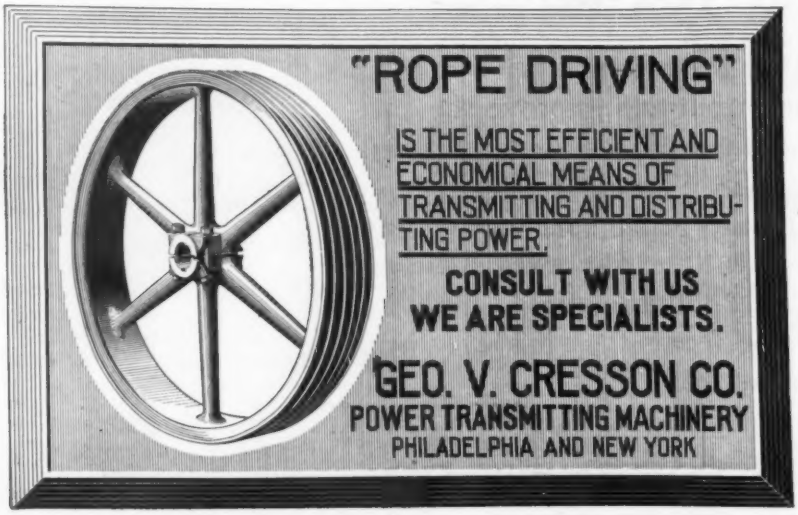
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WE ARE SPECIALISTS.
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A Dye House Skylight
that lets out the steam
and keeps out the storm

THE IRWIN

Mill men desiring a well lighted and well ventilated Dye House should investigate our method of skylight construction. It is built to meet their needs **and does it.**

Write for "Skylights," it tells.

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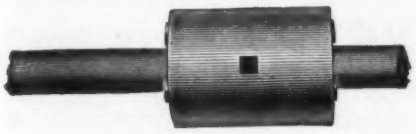

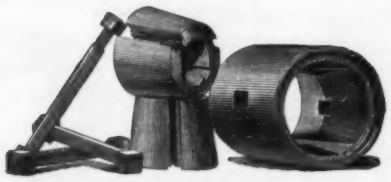

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has a way of holding shafts together, that no other COUPLING can equal.

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is the most important problem of its construction. By using the saw tooth construction of roof with the "*Anti Pluvius*" system of skylight the maximum amount of light is carried into the building to every part of the floor. The ventilation is another important consideration and every mill should be equipped with the *Lovell Window Operating Device* by means of which a long line of sash can be opened and closed from one station. Let us submit estimates for the lighting and ventilation of your building. We will guarantee satisfaction.

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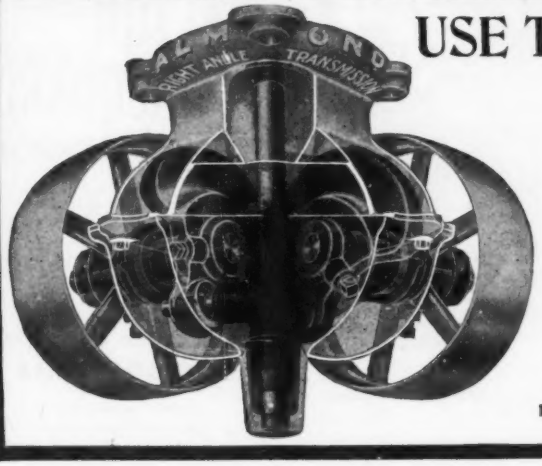

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OF YOUR BUILDING.

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If about to install new machinery and your main line is crowded, get particulars of the

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Runs noiseless; clean; oils itself. Replaces mule pulley stands and bevel gears.

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ESPECIALLY ADAPTED FOR MILL USE.

SEND FOR ILLUSTRATED CATALOGUE AND ESTIMATE.

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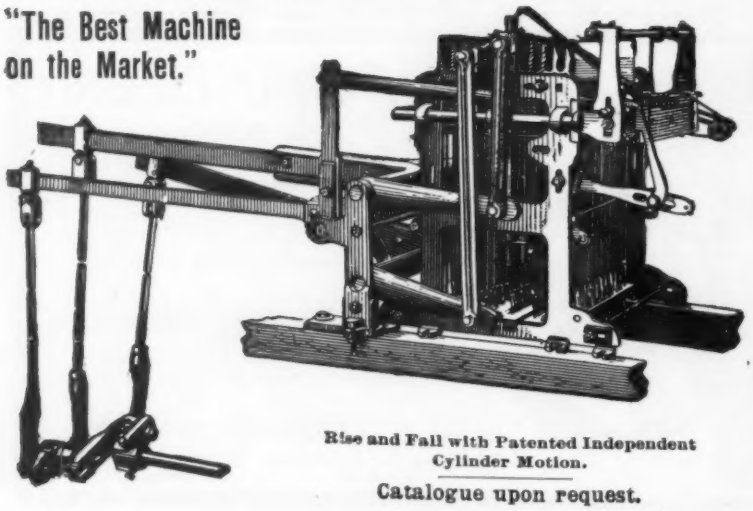

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Catalogue upon request.

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Original Fine Index Machines

Single Lift, Double Lift, Double Cylinder, Rise and Fall, Crossborder.

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Allegheny Avenue and C Street,

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Is the largest manufacturer of HUMIDIFIERS in the World. The last twenty year receiving the HIGHEST AWARD in this country and Europe for its AIR-MOISTENING SYSTEM. EIGHT GOLD MEDLALS and others.

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And Has Been Adopted by the Representative Manufacturers of this Country.

The only System adopted in the Textile Schools. Write for Booklet "T" on Humidification. Legal Proceedings will at once be taken against infringers and users of infringements.

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Always Give More Satisfactory Results Than Any Other Kind

FIG.20.

LANE

Canvas Baskets

Boxes AND Trucks

FIG.22.

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The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.

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Works Better on Cards and Combs.

Olive Oil for Wool (Breton Brand)

Manufactured by our own process which eliminates the non-soluble part, making an Olive Oil that spins as fine as any, yields readily to soap, frees itself with greater ease than any other and last but not least *costs twenty per cent. less.*

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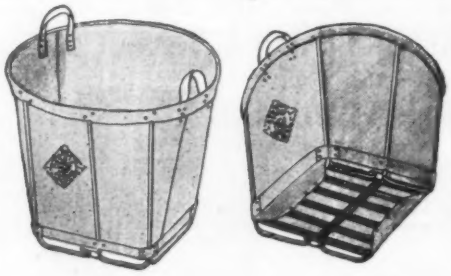

Smaller basket bills

and the satisfaction that only properly constructed baskets give are inducements for you to get in line with hundreds of mills now using

Morris Duck Baskets.

They are very strong and always keep their shape. The Morris construction eliminates nails, screws, corner clips and splinters. A booklet giving details awaits your address.

When this mark you see
'tis sure proof of quality

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Furnishes the Electrical Apparatus for driving and lighting all classes of

TEXTILE MILLS

This Company has installed more than 75% of the total horse power used in the electrically driven textile mills of the United States. Information given and estimates furnished at any office.

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NEW YORK OFFICE, 44 Broad Street. BALTIMORE OFFICE, Continental Trust Bldg.
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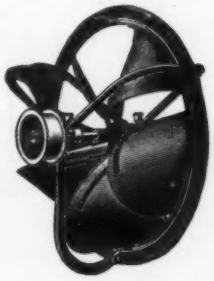
717

Out with the Fog,
In with a Berry Wheel.

Don't let the cold weather fill your Dye House with loose steam that hinders your men and lowers the quality. Keep product and production up to the warm weather mark by using a Berry Wheel.

Very efficient and economical for drying.

This is our Berry Wheel, the most effective agent for moving air, eliminating steam and other impurities in the atmosphere.



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Guaranteed to stand 150 lbs. cold-water test.

Equal, if not Superior, to any in the market

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It Attracts Universal Attention Because it is THE BEST

BADGER'S
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Has taken the lead in the United States, and is everywhere recognized for its efficiency. After competitive tests, lasting more than one week, THE UNITED STATES GOVERNMENT placed an order for 1,200 of

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Automatic, Chemical, Hand Fire Extinguisher Made

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Hydro-Extractors, Exhaust Fans, Dye Tanks and Tubs.

Adjusts itself to an uneven load, runs without vibration. Unusual capacity for high-class work.

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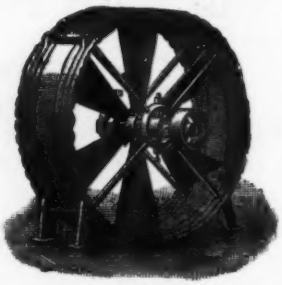

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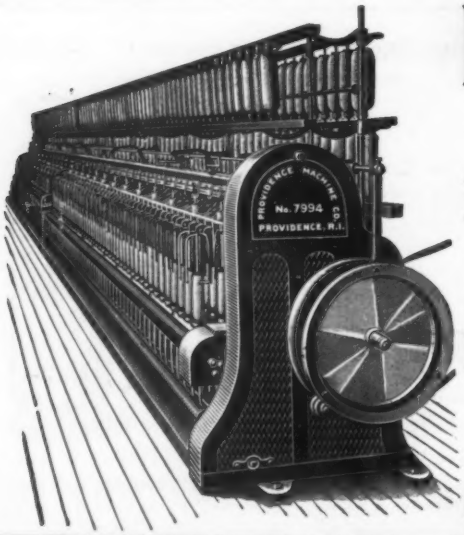

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Improved Cotton Roving Frames

Improved Worsted Roving Frames

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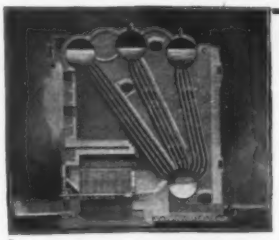

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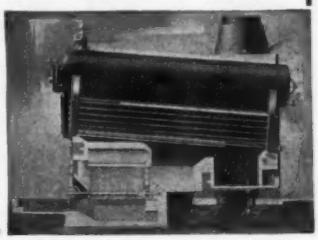
Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



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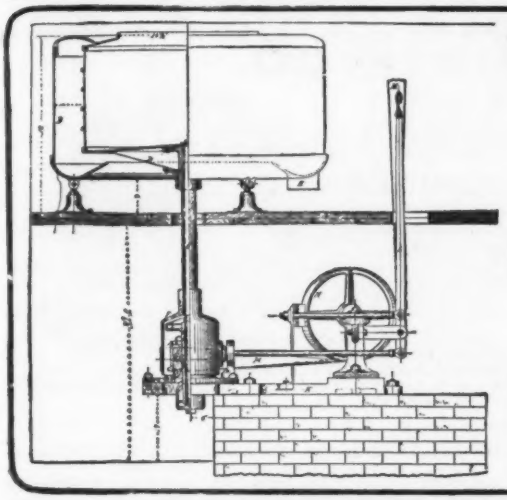

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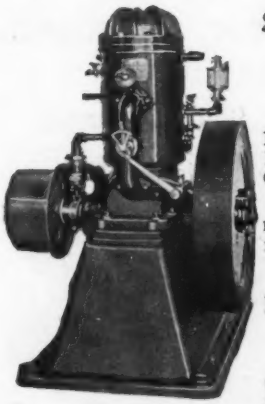

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No Danger. Maximum Power. Simple, Reliable, Economical. Fully Guaranteed.

20 H. P. Engine will run and light your plant for $1.50 per day

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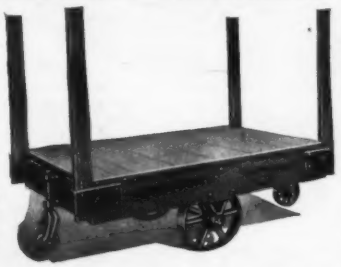

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No. 9.—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

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WM. FIRTH, Pres. EDWIN BARNES, Vice-Pres. JOHN H. NELSON, Treas.

WILLIAM FIRTH CO.

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ASA LEES & CO., Limited,

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OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

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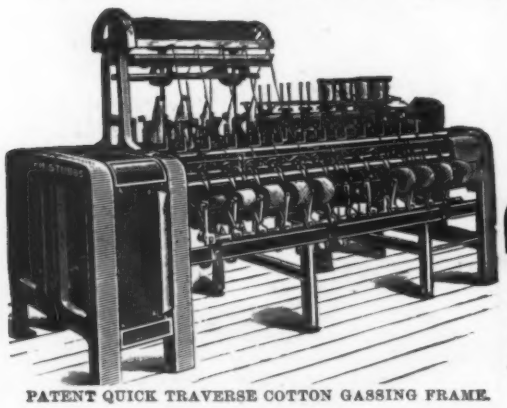
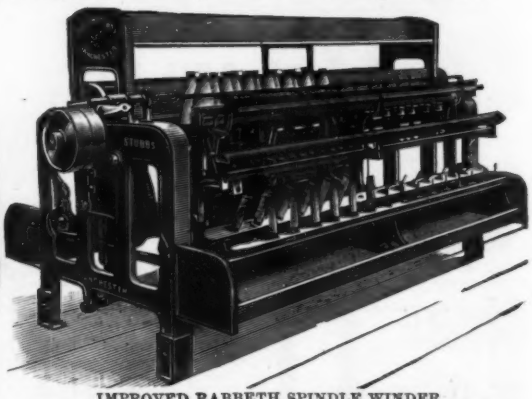
For Winding, Gassing, Reeling, Preparing, Polishing and Bundling Yarns.



PATENT QUICK TRAVERSE COTTON GASSING FRAME.



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With Patent Tapering Motion, for Single Flanged Bobbins.

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AMMONIATED POTASH SALTS FOR SCOURING.

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DUPLEX PUMPS, SIMPLE PUMPS
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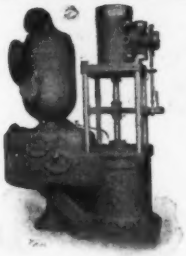

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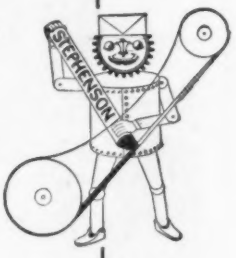
And the picture is on each pound stick---SEE TO IT.

RED Label for Leather Belts;
GREEN Label for Rubber or Canvas.



OF DEALERS, OR

STEPHENSON MFG. CO.
E. A. KELLOGG, Vice Prest.
ALBANY, N. Y.

Reg. U. S. Patent Office

Does Not Drip, Splash or Waste Away

ALBANY GREASE

IS THE CHEAPEST, CLEANEST, SAFEST AND BEST LUBRICANT.

Can be used in any style grease cup on the market

Will not gum, freeze or leave a sediment. Is free from impurities. Uniform in quality. Can be used at all seasons of the year.

Send for FREE sample cup and can of "Albany Grease" giving diam. of oil hole, depth of oil hole from top of cap to journal where to be used and firm's name.

ONLY MADE BY

ADAM COOK'S SONS 312 West St. New York

HYDRAULIC PRESSED

CONCRETE BLOCKS

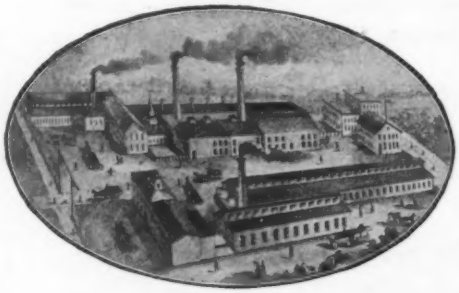
WRITE FOR INFORMATION

Simpson Brothers, Corporation

19 Federal Street, Room 58 Boston, Mass.

D. F. WATERS

Germantown Dye and Bleach Works



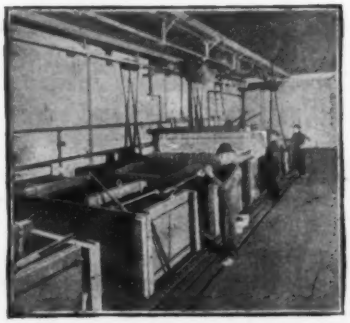
Dyer and Bleacher of Cotton Warps and Mercerized Yarns, Woolen and Worsted Skein Yarns, Eiderdown Cloth, Fine Worsteds for Dress and Knit Goods, Cotton and Woolen Hosiery.

Sample Cards Sent on Application.

53-55 Wister St., Germantown, Pa.

Waters' Dyeing Machine

This cut shows a new and useful machine patented by D. F. Waters for the dyeing of any color on Worsted, Woolen, Cotton and Merino Yarns.



Being successfully operated by some of the largest manufacturers in the country.
The saving of labor will more than pay for a machine in a few months.
Capacity; 2,000 lbs. a day per man.
Machine can be seen in operation at any time at my plant where I have 13 in operation all the time.

D. F. WATERS,

53 and 55 Wister St., GERMANTOWN, PHILADELPHIA, PA.

AVENARIUS CARBOLINEUM

Wood Preserving Paint

PREVENTS ROT AND DECAY

Carbolineum Wood Preserving Co.

347 West Broadway, New York.

The Best That Money Can Buy

SPINNING RINGS.
TWISTER RINGS.
RING HOLDERS.
TRAVELER CUPS.
SILK RINGS.
TRAVELER CLEANERS.

Correspondence Solicited.

WHITINSVILLE SPINNING RING CO.,
WHITINSVILLE, MASS., U. S. A.

CLOTH LUG STRAPS

Every duck and ticking lug strap of our manufacture is stamped with our trade-mark and every strap so stamped is guaranteed to be as good as it is possible to make it and to be made of either duck or ticking throughout

Garland Mfg. Co.
Saco, Maine.
Formerly Loom Picker Co.

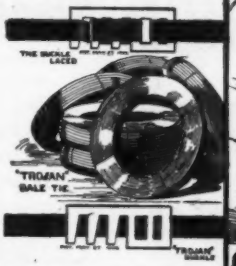
G TRADE MARK

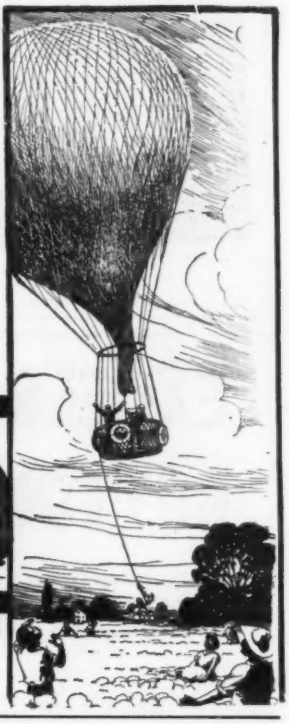
If you are using rope for baling you are helping to pay the gas bill to keep rope prices balloon high.

Rope is up—*Trojan Bale Tie* and *Band* is down.

Trojan Band is made plain or galvanized in coils from 2000 to 3000 feet without a break. Widths ½, ⅝, ¾ and 1 inch.

With the present high prices of rope Trojan Band and Buckle is a money saver.





De Haven Mfg. Co.
Brooklyn, N. Y.
Chicago, Ill.

In tensile strength
In wearing quality
In genuine "money value"

Our Belting Has No Equal

Tanned in the "OLD FASHIONED WAY"

THE L. M. BOWES COMPANY
451-463 Atlantic Ave., Boston, Mass. and Philadelphia, Pa.

Do you trade-mark your goods?

¶ If so they should not be disfigured by the uneven impressions of a hand stamp. **Use Kaumagraph Stamps** —the scientific method—and your goods will be adorned with the real imprint of quality. The whole problem of Textile Stamping is solved in using Kaumagraph Stamps. Samples sent on request.

THE KAUMAGRAPH CO., 156 5th Avenue, New York

50-IN. MACHINE

L. F. FALES

MANUFACTURER AND BUILDER OF

SEWING MACHINES

FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

BUILT WITH ANY REQUIRED NUMBER OF NEEDLES

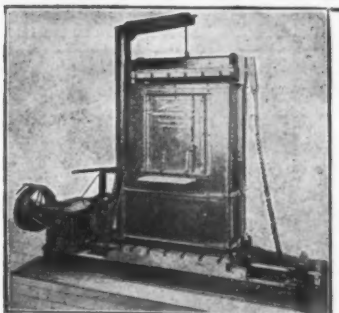
DESIGNER OF SPECIAL MACHINERY | **WALPOLE, MASS. U. S. A.** | PAPER SLITTING MACHINES

EXCELSIOR COTTON SOFTENER

Used with starch batches.

Excelsior Softener prevents sticking or gumming while the yarn is passing over the cylinders and the dropping of starch during the process of manufacture. Makes the yarn flexible and strong, avoiding many unnecessary delays in the weaving room. Insures clean, sweet smelling goods. *It is economical and reliable.* Send for prices, samples aud particulars.

Excelsior Wool Oil Compound Co., Cincinnati, O.



Our Latest Improved Steel Power Press with New Steel Link Chains

Minnich Baling Press

for all kinds of products.

Must turn out more bales with less labor and power than any press in the market.

Send for circular.

Minnich Machine Works,

Lancaster Co. **Landisville, Pa.**

At all Loads

C-W induction motors are constant in speed. Bulletin 88Y gives reasons.

Crocker - Wheeler
Company
Ampere, - N. J.

The Standard Fibre Co's

"NO WASTE"

Seamless Hard Fibre Roving Can

The only can made from pure chemical fibre, without seams or rivets, and with a seamless kicking or protection band. It can be furnished with either a smooth turned fibre top or an electrically welded metal top and with metal bottom.

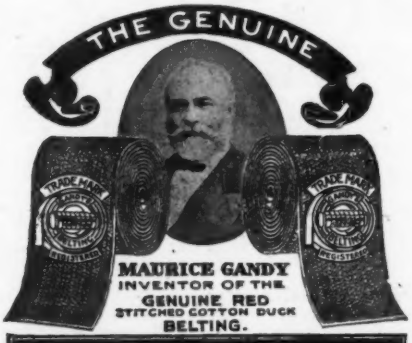
Thousands in use in representative mills in the United States and Canada.

WE ALSO MAKE A HIGH GRADE OF

Cordage Cans	**Comber Boxes**
Oval Cans	**Doffer Boxes**
Waste Cans	**Bobbin Boxes**
Gill Cans	**Trucks and Cars**

Write for prices.

STANDARD FIBRE CO.
SOMERVILLE, MASS.



GANDY
PATENTED 1877

Some parts of a textile establishment are hot and damp.
Leather belts can't stand it, and soon rot out.
Try a **GANDY** and notice the difference in length of service and tractive power. No more leather belts, after a **GANDY** has had a chance to show what it can do.
Be sure to get the genuine—it has the stencilled words "Genuine Gandy Belting" at every tenth foot.

THE GANDY BELTING CO.
BALTIMORE, MD.

A Good Belt for Dyehouses.

Shultz Aqua is the only absolutely water-proof, steam-proof and acid-fume proof belt. It is made from heavy selected hides tanned by our secret process which makes leather impervious to water, steam, oil and acid fumes.

Where the belts are exposed to water or excessive dampness Aqua will give better service than any other belting. It will outwear any canvas, rubber or oak-tanned belt which has been stuffed or coated with water-proof compounds, and will transmit power with less loss from slippage.

For proof send for a sample. Ask for circular No. "6," containing facts about "Aqua" and Sable Rawhide Belting. We send belts on 60 days' free trial.

SHULTZ BELTING CO., St. Louis, Mo.

(Makers of "Sable" rawhide and "Aqua" belting, also belt dressing, cement and lacings.)

NEW YORK BOSTON PHILADELPHIA

Established 1870

John Heathcote & Son

Providence, R. I.

Builders of Improved

Cloth Tentering and Drying Machinery

for WOOLENS, WORSTEDS, FELTS, etc.

Built Upright or Horizontal with Low Down Feed

Ventilating Fans a Specialty

Send for Catalogue

Manufacturers of and Dealers in

WROUGHT AND CAST IRON PIPE

for steam, water and gas.

BRASS, COPPER AND LEAD PIPE.

Iron and Brass Fittings, Valves, Etc.

Iron and Brass Railing and Awning Fittings.

Steam and Hot Water Heating Apparatus.

Steam Specialties, Pipe Fitters' Tools, Etc.

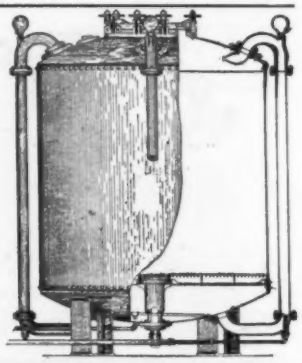
PIPE CUTTING A SPECIALTY.

A Kier that does the work of two

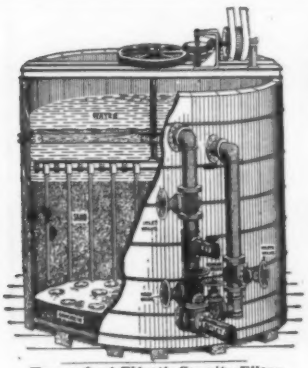
on raw stock if discharged by our Hydraulic Lift.

All styles for raw cotton and yarns, alsofor knit goods, cloth and laces. Many already in use.

Write for prices and particulars.



Wm. Allen Sons Co, 65 Green Street, Worcester, Mass.



Hungerford-Elfreth Gravity Filter.

HUNGERFORD-ELFRETH

FILTERS PRESSURE and GRAVITY

WATER SOFTENERS INTERMITTENT and CONTINUOUS

There is only one Filter, the

HUNGERFORD - ELFRETH,

the only filter which exceeds its guarantee.

MANUFACTURED BY

Philadelphia Water Purification Company,

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New Bedford Textile School

Day and Evening Instruction in . . .

PICKING, CARDING, COMBING AND SPINNING, WARP PREPARATION AND WEAVING, DESIGNING, KNITTING CHEMISTRY AND DYEING.

CATALOGUE ON APPLICATION.

Address

New Bedford Textile School

NEW BEDFORD, MASS.

PHILADELPHIA

Textile School

TWENTY-FOURTH YEAR

Oldest in America . . .
Most Complete in the World.

Endorsed by the leading Educators and Manufacturers.

Cotton, Wool, Worsted and Silk

Instruction given in Designing, Weaving, Carding, Spinning, Chemistry, Dyeing and Finishing.

1907-8.

Day Classes open September 30, 1907.

Evening Classes open October 7th, 1907.

Special Courses in Textile Chemistry and Dyeing

For illustrated Year Book and other information, address

E. W. France, Director,

Broad and Pine Streets, Philadelphia.

The "Reliance"

brand of oak tanned, short lap leather belting is so generally specified by discriminating buyers, because Experience has taught them that it is the best and therefore the cheapest.

Write for catalog and prices to

Chicago Belting Company,
Chicago and Philadelphia.

HYMAN SUPPLY CO., Wilmington, N. C.
MALLARY MILL SUPPLY CO., Macon, Ga.

LOWELL TEXTILE SCHOOL

Fits for the best positions in all branches of the textile industry both commercial and manufacturing.

Complete courses in Cotton Manufacture, Woolen and Worsted Manufacture, Designing, Chemistry and Dyeing and Textile Engineering. All courses include thorough training in Mechanics, Advanced Mathematics, Mechanical Drawing, Chemistry, Decorative Art, Weaving, etc.

Complete equipment for applied instruction.

Fall term begins September 24, 1907.

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HUNGERFORD & TERRY

Filtration Engineers

1412 Pennsylvania Building
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Pressure and Gravity Filters
Water Softeners

T. C. Entwistle Company

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Warpers,
Ballers,
Beamers,

And PATENT EXPANSION COMBS
For Warpers, Beamers and Slashers.

STUART W. CRAMER, Southern Agent,
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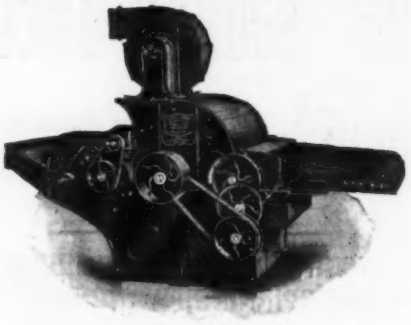
CURTIS & MARBLE MCH. CO., WORCESTER, MASS.



BURR PICKER.

Wool Burring and Picking Machinery.

Cloth Finishing Machinery.

BIRCH BROS.

SOMERVILLE, MASS.

"Coronation"
Mill
Sewing
Machines.

Sews any fabric, wet or dry, thin or thick, fine stitch or coarse stitch.

Send for Catalogue.

Sent on Trial.

Built for Hard Service
Hill's Dye House Cans

Our method of construction gives exceptional durability. Made from the best galvanized sheet iron—all rings riveted into can and then soldered. The bottom is locked on to the ring in a way to make it practically indestructible. Nothing like them for handling wet warps.

Send for booklet.

James Hill Mfg. Co.
Providence, R. I.

BLEACHING, DYEING AND FINISHING MACHINERY.

Eureka Fire Hose

THE BEST FIRE HOSE MADE.

(Trade Mark.)

For use in
Cotton Mills,
Woolen Mills
and Factories.

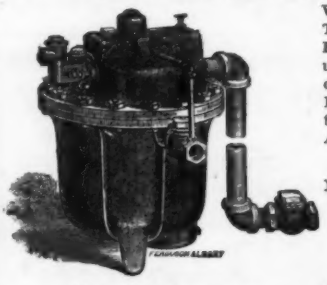
Seamless Woven and Rubber lined EUREKA COTTON HOSE, has no equal. Send for circular and testimonials.

Awarded Gold Medal at the St. Louis Exposition, 1904.

EUREKA FIRE HOSE CO.
13 Barclay St., New York, N. Y.

STEAM TRAPS

NEW FEATURES: Wearing Parts, Valve and Seat Renewable.



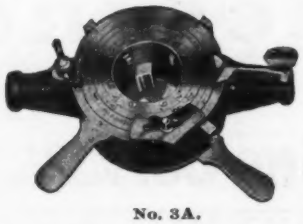
Class A Return Trap

We manufacture Steam Traps for all duties, High and Low Pressures, returning the Condensation back into Boiler or Discharging to Hot Well, Tank, or Atmosphere.

No Elastic Gaskets, all Joints Ground Metal and Metal.

SEND FOR
Catalogues A, B and C

ALBANY STEAM TRAP CO.
ALBANY, N. Y.
Established 1870.
JAMES H. BLESSING, Pres. THOS. F. RYAN, Sec't'y & Treas.



No. 3A.

Not a single loose die or bushing, the tool threads 1 in. to 2 in. pipe without change of dies or guides—E. K. Dies make good threads every time.

The Oster Manufacturing Co.

Dept. T, - Cleveland, Ohio.

Water Softened Filtered

Make an installation of a Softener or Filter and perfect the quality of your product.

Keep scale, corrosion or mud out of your boilers and save a nice income from your repair and coal bills.

American Water Softener Co.

1002 Chestnut Street, Philadelphia.

1866 1907

HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO. HARTFORD, CONN.

40th Annual Statement

January 1, 1907.

Capital, $500,000.00
Surplus, 1,485,457.73
Reserves, 1,931,847.29
Assets, 3,978,245 71

The HARTFORD was the Pioneer Company in the field of Steam Boiler Insurance, and it is the only company which makes a specialty of and does exclusively a steam boiler inspection and insurance business.

The HARTFORD is the only company whose entire talent and energies are applied to the study of steam, to the scientific construction and installation of boilers, and to their periodical inspection by expert mechanics.

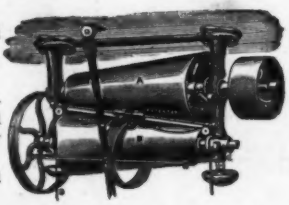
The HARTFORD is the only company whose entire assets and resources are held exclusively for the protection of steam users, and the payment of losses occasioned by the explosion of steam boilers and for no other hazard whatsoever.

The HARTFORD is now doing nearly nine-tenths of the Inspection and Insurance of Steam Boilers in the New England States, and nearly two-thirds of the entire amount done throughout the United States.

C. E. ROBERTS, Manager,
W. H. ALLEN, Asst. Mgr.,
101 Milk St., Boston, Mass.

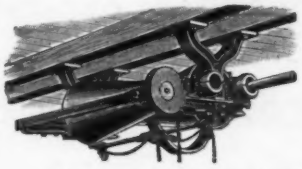
Variable Speed Countershafts

The Evans Friction Cone Pulleys



will drive your machines at any desired speed from 1 to 6 by simply pulling a cord.

They are guaranteed to do your work.



We'll furnish them for either floor or hanging use.

Over Ten Thousand Sets in Operation in this Country and Europe.

Send for Catalogue.

EVANS FRICTION CONE COMPANY

G. Frank Evans. - Newton Center, Mass.

FOSTER SUPERHEATERS

Installed in any type of boiler without change in setting. Uniform superheat guaranteed.

Power Specialty Company,

BOSTON: 10 Post Office Square. NEW YORK: 111 Broadway.

An Essential to the Weave Room

WE ARE HEADQUARTERS

S. A. FELTON & SON CO. MANCHESTER, N.H. The Loom Duster

Cutting Machines

Every Textile Manufacturer has his own special problem. If these problems relate to CLOTH CUTTING in any way, shape or form we are always glad to volunteer our help in solving them.

61 Poplar Street
Brooklyn, N Y.

Cameron Machine Co.

Special Textile Machine Designers

Telephone 989-3. W. U. Code Word—Adamsal

A. L. ADAMS,

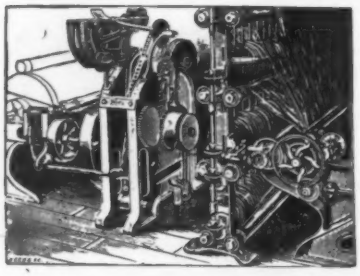
MANUFACTURER OF PATENTED

CORSET AND FABRIC MACHINERY.

Strip Cutting, Folding and Winding Machines, Plain or Bias, 300 to 2400 Yards a Minute.

I personally, have introduced and taught people to do bias on my machines in seven countries. I furnish a complete equipment for cutting straight or bias fabric, and folding same.
Automatic Strip Cutting, Folding and Winding Machines in three variations. Universal Folding, Winding and Spooling Machines in three variations. 40-inch Winding and Cutting Machines. All of the seven machines for straight or bias fabric.
These machines pay for themselves in a short time. Any kind of a folder for any kind of fabric, bias or straight, 1-8 to 6 inch,

151 MIDDLE STREET, BRIDGEPORT, CONN.



TORRANCE MFG. CO.,

HARRISON, N. J.

TORRANCE PATENT **AUTOMATIC BALLING MACHINE**

With all the latest improvements for Wool Cards. The latest and best and only feed that will make yarn positively even.

ALSO

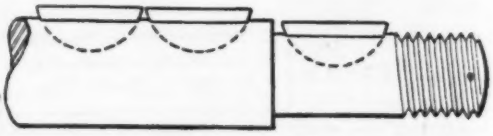
CHOQUETTE WASTE SAVER. Saves card fly.

Write for particulars.

Key Seating Attachment

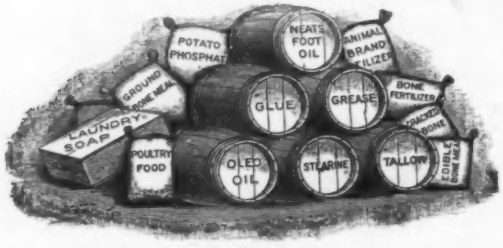
FOR

Whiton Gear Cutter



We offer an attachment for use with our Gear Cutting Machine, to cut key seats for the Woodruff System of Keying. Write for description, circulars and price.

THE D. E. WHITON MACHINE CO.,
19 Oak Street, New London, Conn.



Tallow for Sizing Especially Prepared

FOR COTTON AND WOOLEN MILLS

Consolidated Rendering Co.

40 N. Market Street, Boston.

BLEACHING
DYEING
FINISHING
MACHINERY

ARLINGTON MACHINE WORKS
ARTHUR BIRCH
ARLINGTON HEIGHTS, MASS.

CRABBING
OPENING
SEWING
MACHINES

Shaw's "Victor" Travelers
Manufactured by
VICTOR SHAW RING TRAVELER CO.
Incorporated 1899.
23 Sabin Street, PROVIDENCE, R. I.

ASHWORTH BROS.,
MANUFACTURERS OF
Card Clothing of Every Description
FALL RIVER, MASS.

Thread and Silk **SPOOLS** of any description
made from one piece, up to 6" long and 3" dia.

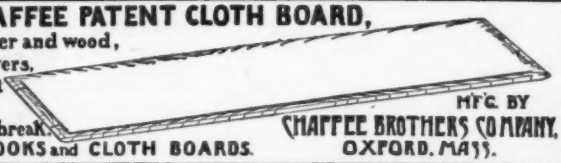
We are located in the best white birch region. Our work and prices seem to satisfy the most particular customers. We can give any finish desired. Estimates furnished on samples submitted.

E. L. TEBBETS & CO., Locke's Mills, Me.

LATEST PATENT.
Hall's "Can't Slip" Spindle.
CORRESPONDENCE SOLICITED.
I. A. HALL & CO., Paterson, N. J.

SAVE
Their Cost
In Freight.

THE CHAFFEE PATENT CLOTH BOARD,
Made of paper and wood,
Needs no covers,
Will not split or warp;
Not liable to break.
BOX SHOOKS and CLOTH BOARDS.



MFG. BY
CHAFFEE BROTHERS COMPANY,
OXFORD, MASS.

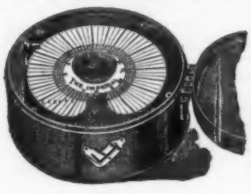
Clean
LIGHT
Strong

ANYTHING

Entire Outfits for New Mills, or small and odd items that you don't know just where to obtain, can be found at the

AMERICAN SUPPLY CO.,
PROVIDENCE, R. I.

in Mill Supplies.



WATCH YOUR WATCHMAN
The New Imperial Watchman's Clock
Compels your watchman to do his duty. This clock will reduce your insurance rate. No complicated mechanism. Absolutely reliable. Full particulars.
T. NANZ CLOCK CO., - - 127 Duane Street, New York.

BALE-TIES and BUCKLES
BOX STRAPPING ALL STYLES

Samples and prices on application.

ACME STEEL GOODS CO.

Name changed from Acme Flexible Clasp Co.
NEW YORK, 28 Elm St. CHICAGO, 2832-40 Archer Ave.
ATLANTA, GA., Empire Bldg.

Important Improvement in Worsted Spinning.

THE BAMFORD DUST PROOF and SELF-LUBRICATING SPINDLE TUBE

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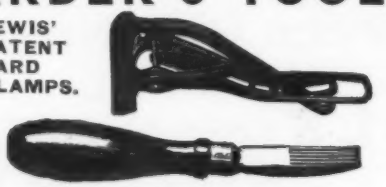

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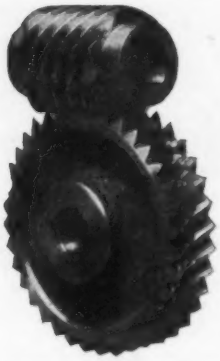

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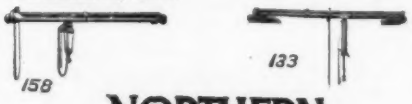

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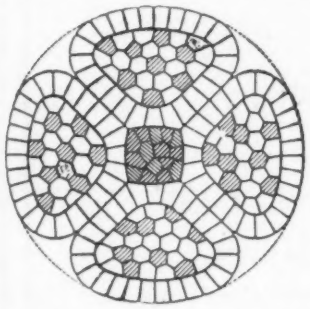

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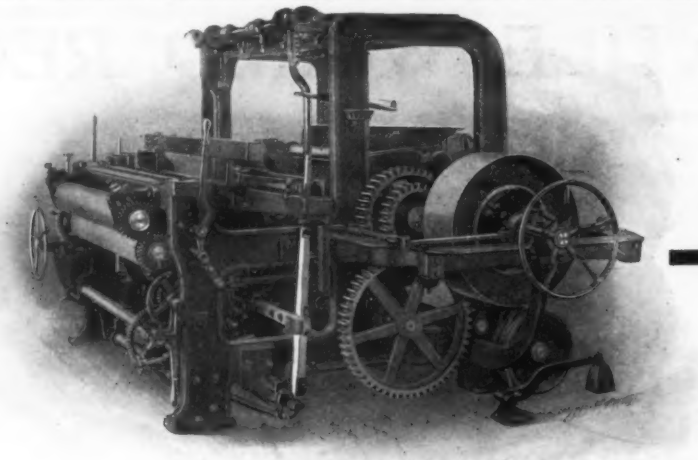

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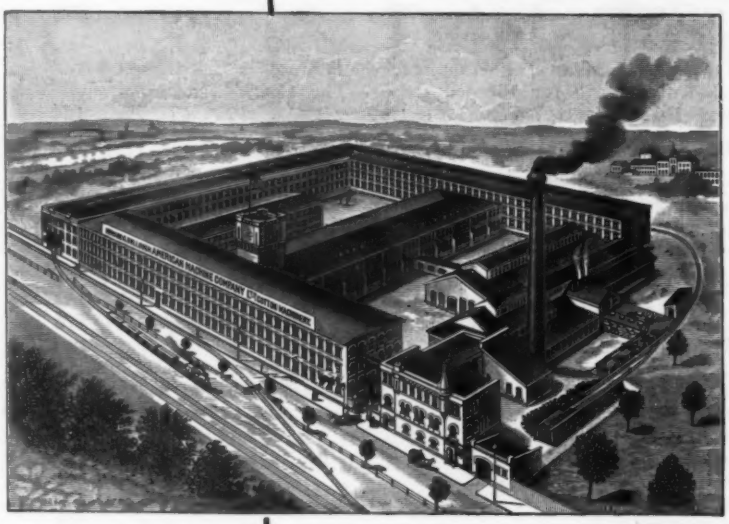

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VOL. 33 (NEW SERIES.) November, 1907 No. 2

Monthly Comment.

How to Promote Desirable Immigration.

The scarcity of desirable mill help and the vigilance of the Washington authorities in detecting violations of the contract labor law have brought mill managers face to face with a problem of great difficulty during the recent years of prosperity. About a year ago one American manufacturer, a large part of whose machinery had for months been idle waiting for operatives, was in despair because of the resulting losses, when an expedient occurred to him, which he tried and with the most gratifying results.

At the time he had in his cotton mill about 500 Hungarians, who were excellent operatives, industrious, careful and peaceable. The mill owner had published in the local newspaper an account of the cotton industry in his town. It gave particulars regarding wages, cost of living, climate, houses of the work people, schools and other matters likely to interest a prospective emigrant to a new country, and was freely illustrated with views of the mills, tenements, schools, churches and surrounding country. The manufacturer then asked each of his Hungarian employes to give him the addresses of as many friends and acquaintances in Hungary as possible.

In this way he obtained about 3,000 Hungarian addresses, to each of which he mailed a copy of the newspaper containing the article describing the town and its industries. In about two months the results of the experiment began to materialize in the form of an increasing number of newly arrived Hungarian immigrants who made the town in question their destination. A month later the stream of immigrants landing at Boston on their way to this particular town became so large that it aroused the suspicion of the United States government officials, who sent agents to the mill town to make an investigation. Everything, however, was found in proper form. The most rigid cross examination did not disclose the slightest reason for suspecting that the immigrants had been induced by any illegal means to come to America. The mill managers were also able to show a clear record in this respect and as a result no interference was made with the Hungarians.

This plan deserves the attention of all manufacturers desirous of attracting skilled foreign help to their mills. It is entirely within the law providing the published article is limited to a statement of local conditions and contains no promise expressed or implied to give the foreigners employment

on their arrival. Care should be taken, as was done in the case cited, that the statements made are free from exaggeration, giving the reader as exact an idea of actual conditions as it is possible to convey by means of the printed page. In the long run it is much better to have the conditions better than the prospectus as this would remove the possibility of disappointment.

What a Manufacturer Should Know about Coal.

The attention of New England manufacturers has been directed rather sharply to the question of coal during the last few months through the investigations of the finance commission appointed by the Mayor of Boston to investigate the methods employed in the various departments of the city's work. As a result of these investigations some criminal prosecutions are likely to follow and it has been shown that often the city has not been getting the coal specified and paid for. In many cases the officials who were responsible for the purchases did not know how to determine what they were getting or what they should specify.

Doubtless to many manufacturers coal is coal, and they think the only way to determine what is good coal and what is poor coal is to burn it and see what results they get. Those old work-and-try methods are now giving place in up-to-date plants to chemical tests and expert investigation so that the manufacturer may know within limits what coal he ought to buy and, more important still, may be sure he is getting what he specified and paid for.

The importance of this question made the first winter's meeting of the New England Section of the Society of Chemical Industry of more than usual interest, for the topic of the paper presented was "The Economics of Coal Consumption," by E. G. Bailey, chief of the coal department of Arthur D. Little's laboratory. This laboratory has been ememployed by the finance commission in its investigations and is used by many large power users, including textile manufacturers, in the investigation and analysis of their products, including coal and oil. The discussion which followed the presentation of this paper was participated in by coal dealers, Technology professors, mechanical engineers and representatives of the large power users. An important point that stood out clearly was the general recognition of the fact that the value of coal can now be determined as accurately as the value of any other mineral ore and should be bought and used with the full appreciation of its composition. Attention is called to Mr. Bailey's paper which appears in another part of this issue.

The Asiatic Market.

At the recent Washington meeting of the National Association of Cotton Manufacturers', Secretary Straus, of the Department of Commerce and Labor, made a speech in which he said:

> Today there is invested in the cotton industry $613,000,000; its annual product is $456,000,000; it pays out annually in wages $106,000,000 and exports $53,000,000, about one-twelfth of the value of this class of goods that enters into international trade.
>
> The so-called yellow races are steadily increasing customers of your goods, and as they advance and prosper, provided we keep their good will, they will buy more and more of your product and of other American manufactures.
>
> China took $20,000,000 less from you last year than the year before. How much of this was due to a "silent non-importing agreement" which was used so effectively by us preceding the revolutionary war, and which is known by the modern name of "boycott," I leave you to figure out.
>
> If you should build your tariff walls too high in this country, you will encourage high walls on the other side which are known by the name of "discriminating duties." We are striking that wall now.

It is unfortunate that Secretary Straus was not more specific in his statements. He leaves too much for his hearers to guess at. He makes it too easy for himself to dodge any awkward questions regarding his contentions. Does he mean that the United States should reduce the Dingley tariff in order that we may sell more cotton goods to the Asiatics? That is a fair interpretation of his words, and if it is what he means, we would like to know how he connects the supposed cause and effect.

Mr. Straus is a successful merchant, a member of the firm of Macy & Co., New

York. His life work has consisted in making a profit by the sale of merchandise, a calling that is calculated to make a man a disciple of the doctrine of mere cheapness. In the merchant's particular sphere the main object is to keep goods moving by selling them at a low price and buying them for less. By getting engrossed in this occupation the merchant is apt to lose sight of the fact that the inanimate merchandise he handles is the product of human labor and that the purchase price represents wages that afford a living, good or poor, to millions of his fellow creatures. The merchant may profit by buying cheap, but the workers profit by high wages that increase the cost of the goods.

Mr. Straus, in his eagerness for mere volume of trade would lower the Dingley tariff that our sales of cotton goods to Asia might be increased. We wish Mr. Straus would tell us how we are to compete with cheap foreign labor in the struggle for the cotton goods market of Asia. We ask him to read the report on the Japanese cotton industry from Hunter Sharp, American consul at Kobe, Japan, printed in this issue and written but a few days before Mr. Straus made his speech at Washington. Average wages of Japanese mill operatives, 18 cents a day for males, 11 cents a day for females. Mr. Straus would have our mill operatives compete with this cheap labor for the Asiatic market. And how would Mr. Straus arm us for the conflict? Why, by lowering our own tariff, making it easier for the Asiatics to sell the products of their cheap labor in the United States. This is the apparent policy of the present administration, as represented by the Secretary of Commerce and Labor.

Short Time in Linen Mills.

Buyers of Irish linens have for some time had their profits steadily reduced by the advance in cost of goods from the mills and by the failure to secure a corresponding advance from their customers. The result has been the formation, some time ago, of a buyers' combine by which a general hold-up of orders was brought about. Since then the linen manufacturers have seen the stocks of goods piling up in their warehouses with no buyers at the prices asked. So serious has the situation become that a meeting of the Irish Power Loom Manufacturers' Association was held at Belfast on October 22, to consider the recommendation of the Executive Committee that the mills go on short time. No action was taken, but another meeting was arranged, and in the meantime the manufacturers were requested to do some careful figuring to determine whether short time or a reduction of prices would mean the smaller loss of profits.

German Spinners and the American Cotton Belt.

Difference in language is one of the greatest barriers between nations. As a result of it the growing of cotton in America by European spinners has but recently attracted special attention in Germany. A translation of the report of the English delegation that visited the United States last year makes news in Germany of what has passed from the public mind in England and this country. The German interest in the subject is stimulated by the fear that their English competitors may steal a march on them, a writer in the "Zeitschrift fuer Textil-Industrie" thus giving expression to it:

> If the farmers become spinners, spinners must become farmers. Nothing remains for the English spinners than to move from Lancashire to America, buy suitable land there and begin the cultivation of cotton. . . . Is it impossible for Germany to do what England is apparently about to accomplish? It is a cause of profound satisfaction that the German cotton industry, carried away by the colonial enthusiasm of the new head of the German Colonial Office, has already announced the intention of establishing cotton plantations in Germany, East Africa and Southwest Africa. Possibly other German colonies are suitable for this purpose and it is beyond question that the most desirable condition is for the cotton to be grown on German soil by German farmers and manufactured in German spinning mills. But this attractive prospect is unfortunately still only a prospect, and even the most extreme optimism does not permit the belief that this prospect will materialize in the near future. The duty is to do the one thing and not to neglect the other. We should develop cotton growing in the German colonies as far as possible, but what conditions make it unwise for us to follow England's example and establish a German company in America to raise cotton on a large scale? We are well aware

of the difference between the English and the German markets, but this difference in no way necessitates our submitting forever to the domination of the English cotton lords. May the battle cry, "Die Deutschen an die Front!" be decisive in this industrial field.

One good result of the discussion of cotton growing in the South by English spinners has been to stimulate English interest in the American cotton belt and awaken a desire to investigate conditions and possibilities on this side of the Atlantic. It is highly desirable that the discussion in Germany shall have the same result, bringing the Continent as well as England into closer social and commercial relations with the South.

The German Tariff Agreement.

It is seldom that we find ourselves in agreement with the "Springfield Republican" on the tariff question. The discussion of the German tariff agreement furnishes one of these rare occasions. In the following editorial from the "Republican" the agreement is condemned because it has been put into force by executive usurpation of the powers of Congress. The point made regarding the omission of quantities from the statistics issued by the Bureau of Statistics is well taken and should receive the immediate attention of the officials of that department. Are the figures relating to our trade with Germany being juggled to conceal the effect of the German agreement on the administration of our protective tariff?

The uproar in high tariff circles over the president's recent reciprocity arrangement with Germany has brought out from the bureau of commerce statistics at Washington a statement of the trade movement between the two countries for July, August and September under the said arrangement. The figures compare as follows with those of the same months in previous years:

Three months.	Imports from Germany.	Exports to Germany.
1903	$30,996,789	$33,016,659
1904	32,322,827	35,174,125
1905	34,207,897	49,508,211
1906	38,278,453	46,028,390
1907	43,844,495	50,307,064

There has thus been an increase of trade on both sides of the account, but it is larger for German than for American exports.

The difference would not be great enough to be worth making a fuss about by the protected interests did the value figures tell the whole story. But they do not. It is all a question of valuations made in Germany, on which duties are assessed at the American customs houses. The $43,844,495 of German exports to the United States during the three months of this year represent the values named by German exporters under the new arrangement by which the German export price governs instead of the German home market price as required by the customs administrative act; and German prices for export may obviously be about anything the German exporters please to make them for purposes of assessment of duties on this side. It is thus fair to conclude that the recent increase in German exports to the United States is considerably larger than represented in the table.

In the circular given out by the Washington bureaus recently German exports to the United States in the three months have been listed by principal articles in comparison with the same months of the previous year. Quantities have been given where possible, but it is a little singular that valuations in such cases are not given even though the department must be in possession of the figures. Thus cotton cloths exported from Germany to the United States amounted to 1,021,403 square yards against 976,608 square yards in the same period of 1906. Now both specific and ad valorem duties are assessed on imports of cotton cloth, and why then are not the values given as well as the quantities in this case? Perhaps the German valuations for this year have been so far reduced under President Roosevelt's arrangement that the greater quantity as compared with 1906 may figure in the value total of imports from Germany at an actual reduction as compared with 1906.

Again, imports of wool cloths show an increase from 601,184 pounds in 1906 to 711,919 under the new arrangement; and imports of wool dress goods from 2,643,405 square yards in 1906 to 3,469,710. But invoiced values of the same are not given, yet they may be so low now as to represent, in the value total of the above table for 1907, a decrease in importations from Germany, whereas there was actually a heavy increase. As American duties on such goods are both specific and ad valorem the government must have the value as well as the quantity figures. Why then were these value figures kept back in the particular instances where it is possible to judge of the fact and extent of German undervaluations made so easily possible through the new arrangement?

We are not quarreling with the general policy of more liberal trade relations with Germany or any other country. Very far from it. What we have to do with in this case is not tariff reform or reciprocity authorized by Congress in accordance with law, but a reciprocity agreement through executive decree without any sanction of law and directly against the provisions of existing law. It seems to be a bargain unfairly favorable to Germany; but that is not the point. The issue here raised is simply one of executive usurpation, which is not to be regarded as a small and exceptional matter when a man of Mr. Roosevelt's temper and tendencies occupies the chief executive office.

The ports of Boston, New York and Philadelphia receive about 95 per cent. of all the wool imported into the country.

The European Cotton Manufacturers' Excursion Through America.

As seen by the Editor of the Textile World Record, who accompanied the Party.

Now that the Atlanta Cotton Conference is a thing of the past and the one hundred and twenty or more delegates from Europe have returned to their homes to resume their regular work of spinning yarn and weaving cloth, the question naturally arises, What has been accomplished by this international gathering? Among the immediate results is a better acquaintance among the planters and manufacturers. They have met face to face in large numbers and discussed the various questions which they think are troubling them. While many of these questions are undoubtedly of great importance, still the discussion of them at long distance by planters and manufacturers, who were practically strangers to each other, has led to exaggeration of their real import to the trade. The discussion at Atlanta and on the tour through the country has had a calming effect on everyone who took part, and we are confident that all have gone home feeling more hopeful and confident that a solution for every difficulty will eventually be found.

Inspecting a Cotton Ginnery at Charlotte, N. C.

PERMANENT ORGANIZATION.

Probably the most important action at the conference was that looking to the formation of a permanent organization. Some misapprehension has arisen regarding what has really been done in this connection. This was shown by a prominent Continental delegate who, after the conference, asked if the American cotton manufacturers' associations had joined the European Federation. The conference passed a resolution providing that a permanent organization should be formed by the appointment of delegates from the European Federation, the English Federation, two American associations of cotton manufacturers and three American associations representing the planters. This action is to be passed upon by the respective asso-

ciations. When ratified, as now seems certain, the result will be simply an organization for a permanent conference of independent associations. None of them has joined any of the others, but all have decided to hold regular international conferences with the object of pulling together along the lines of their common interests. There is nothing in the permanent conference that impairs in the slightest degree full liberty of action by each association.

much greater. The American is extravagant; the foreigner, economical. The American is recklessly optimistic; the foreigner is the embodiment of prudence. The American lives in a rich, sparsely populated and undeveloped area, the foreigner finds himself in thickly settled countries whose natural resources have been brought to a high state of development.

One result of these differences is found in the relative consumption of cotton. The 90,-

Mr. Waibel of Augsburg, Germany, goes to the county fair at Birmingham, Ala.

THE LINE OF DIVISION.

In spite of the prominence given to the questions of speculation, baling cotton and prices, the real line of division at Atlanta was between Americans and foreigners, rather let us say, between those inside the Dingley tariff wall and those outside. This division was not political nor racial. It was purely economic. It was a division due solely to the difference in commercial and industrial conditions on different sides of that tariff. There are approximately 90,000,000 people on the inside; 1,400,000,000 on the outside. The former are living at a higher level of prices. Their wages and cost of living are

000,000 Americans, comprising but 6 per cent. of the world's population, consume 29 per cent. of the world's cotton. In the United States the per capita consumption of cotton is 25 pounds annually; outside, 5 pounds. That is, 90,000,000 Americans are equal to 450,000,000 foreigners as users of cotton. And this increased consumption is due not to lower, but to higher prices. A like difference in values in nearly every line will be found between the United States and foreign countries. This explains why the most important division at the conference was between the respective apostles of low and high prices.

The Europeans in public speeches and private conversation endeavored to convince their hearers that the way to increase both sales and profits was to reduce the cost of production. Thoroughly convinced that this was the only way, they looked with astonishment and pity on the American, who, while admitting the mathematical soundness of the proposition, held to the conviction that profits in cotton raising could be increased as well by raising prices, while, as for orders, these were already as large as could well be filled.

The residents of Greenwood, Miss., watch the early morning arrival of the Europeans.

No argument could reconcile such differences. Only by being transported across the border line could the point of view be changed. The Europeans extracted what comfort they could from the situation, one of them remarking: "We have nothing to fear from the competition of a country where a herring costs 40 cents and can be bought in Manchester for thrippence."

THE FEAR OF COMPETITION.

That remark had an element of truth. In a certain kind of competition, such as that for the cotton trade of Asia in which low price turns the scale, the cotton manufacturer of low priced Manchester has nothing to fear from the competition of high priced America. That, however, is but a narrow view of the question. The real competition in the cotton trade is between the American and the foreign consumer rather than between American and foreign manufacturers.

Of the total product of the world's cotton mills the cotton goods imported into and exported from the United States are but a very small fraction. Practically all of the business of the American manufacturer consists in supplying the home market, while the foreign manufacturer is confined to the foreign market. The American consumer with his higher level of prices is bidding for cotton goods against the foreigner with his low purchasing power. In 1895 the United States consumed 22 per cent of the world's cotton crop; eleven years later, 29 per cent. Is this increase in American consumption to continue? If so, how is the foreign world to be clothed? And what is to become of the

foreign manufacturer who depends on the foreign consumer for his market?

With the foreign delegates these were the questions that would not down. It was to find an answer to them that the Europeans had come to America.

THE COTTON SUPPLY.

It was the custom of the ancient Egyptians to place at the head of the table at every feast a skeleton to remind those present that they were mortal. This reminder of industrial mortality was provided by Mr. Macara, the leader of the European delegation, who at nearly every banquet held up to his hearers the cotton shortage and short time of 1904. Not content with reciting the harrowing events of that year when the working time in the mills of Lancashire was cut from 55 to 40 hours per week, he worked on the emotions of his hearers by conjuring a picture of the convulsion that would have occurred at the end of April of that year if the drastic remedy of short time had not been adopted by the European Federation.

Evidently this recital was intended to arouse a desire among the planters to increase the cotton crop and prevent a recurrence of the 1904 crisis. In this it failed. Its only result was to expose to those who have cotton to sell the weak position of those who must buy it. To be sure the American orators extolled the virtue of a universal human sympathy and gave utterance to the fine sentiment that all races and peoples prospered or suffered together, but when it came to a choice between high-priced American cotton and short time in European mills, charity invariably began at home.

Accumulation of last year's bumper crop at the Cleveland Compress at Houston last December. Cotton was stored in the woods in the distance.

COLONIAL COTTON.

Prominence was given by the visitors to the efforts being made, particularly by the British Cotton Growing Association, to extend the cultivation of cotton in Africa, and the Southern planters were solemnly warned that if they persisted in the demand for 15-cent cotton, the foreign mills would raise their raw material in Africa to the loss of the United States. Mr. Macara voiced this

warning in nearly every speech. At Memphis and St. Louis he stated in his most impressive manner the high resolve made by British manufacturers that Lancashire mills shall not again be forced on short time by a shortage of cotton from America.

This warning or threat of African competition fell on deaf ears. During its repetition at one of the stopping places a tall, raw boned, muscular, sun burnt Texan planter leaned over and whispered: "Texans don't scare very easy." The Southern planter does not take colonial cotton seriously, nor will he until colonial cotton is raised on a commercial basis in quantities large enough to affect the world's supply in an appreciable degree. He is convinced that cotton can be raised to the best advantage in the South, that raising "American" cotton elsewhere can be profitable only when American cotton is selling at a very high price, 15, 18 or 20 cents a pound. He contemplates the success of colonial cotton with entire equanimity, confident that it will mean a prosperity in the American cotton belt far beyond any hitherto attained. How little heed he gives to colonial competition is shown by the European cotton growing companies all his readiness to give the representatives of information and assistance possible to help their work along. Moritz Schantz, of Chemnitz, and Willi Supf, of Berlin, representing the German cotton growing companies on this excursion, can testify to this fact.

The Europeans in discussing colonial cotton seldom failed to assert that greater progress had been made than was accomplished in a corresponding period when cotton raising was first established in the United States. Even if that is true it proves nothing. From the beginning the American cotton belt has been equal to all demands upon it and while the production was small at the start the consumption was equally so. In comparing the early American cotton crops with the present colonial crops, the Europeans forget the different conditions of demand.

Mr. Kuffler of Vienna, Austria, helps to pick the Mississippi cotton crop at Heathman.

RAISING AMERICAN COTTON.

Closely connected with the European warning of what was to be done in Africa was the European advice as to what should be done in America to increase the cotton

supply. Few of the European delegates had ever seen a cotton field previous to this trip. At Greenwood, Miss., they had their first good opportunity, and they flocked into the field like a lot of school children. The squares, the blossoms, the bolls and the seeds were the objects of unceasing wonder. They cross-examined the dusky pickers and industriously filled their note books with memoranda of the information thus obtained at first hand. When Banks, the official photographer, mounted a wagon and in a dramatic manner called "Attention, all hands pick cotton," they obeyed the order to a man, that a record of this scene might be carried back to Europe. That done they resumed their personal investigation of cotton raising, and it was only with the greatest difficulty that their leader, Mr. Macara, cleared them out of the field in order that Banks might "take a picture of it with the colored people only."

Alice Walker of Houston, Texas, stops to watch the European visitors.

It was from primary studies like this that the visitors turned to the banquet halls where their duly authorized spokesmen assumed the role of instructors and lectured the Southern planter on his lax methods and neglect of opportunities. At New Orleans, Mr. Macara left the party and rejoined it at Memphis, having made in the meantime, it was reported, some careful investigations of different plantations. At every stopping place thereafter he gave the results of his observations and laid especial emphasis on the difference in the production of two plantations that he had visited. One yielded half a bale per acre; the other, a bale an acre, at a profit of $30 per acre. This difference, he asserted, was due solely to the difference in methods of cultivation, as the two farms were in the same section of the country, and had practically the same soil. The moral of all this was that the Southern planter had only to improve his methods of farming in order to double the crop and make it 26,000,000 instead of 13,000,000 bales a year.

Personal enquiries by the writer disclosed the fact, admitted later by Mr. Macara himself, that the half bale an acre farm was a private plantation, while the bale per acre had been obtained from a farm operated as an experiment station by the State of Missis-

sippi. The unfairness of the comparison is obvious. In one case the planter was working the land at the risk of a loss for a possible profit, using the best methods obtainable with his financial resources; in the other case salaried officials backed by the financial resources of a wealthy government were forcing the land to see what it would do, having no fear of a loss, and with considerable latitude in calculating a profit.

The claim of a profit of $30 an acre from the government farm deserves little attention in the absence of a detailed financial statement of the operations. Everyone who has had anything to do with government bureaus knows what a gulf separates them from actual business.

The reception committee greet the visitors at Houston, Texas.

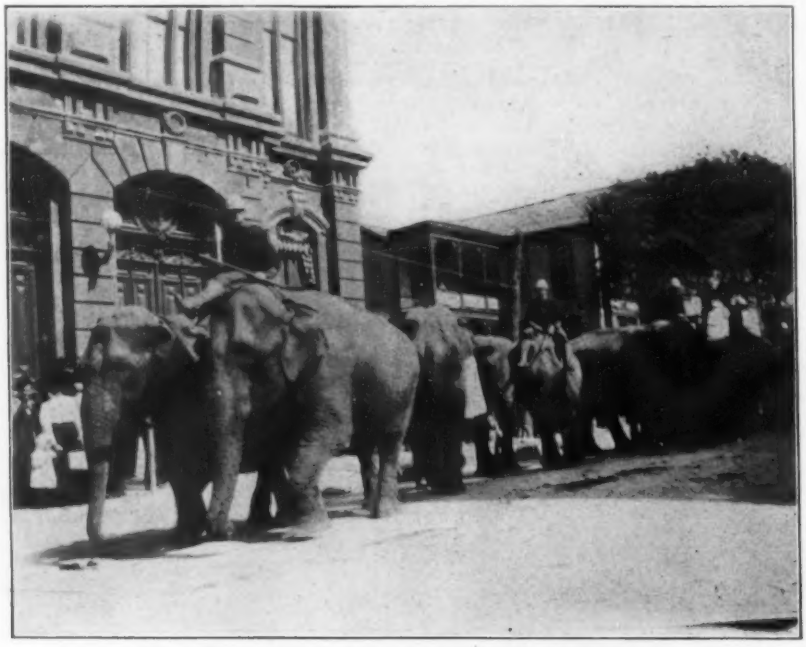
The comparison made by Mr. Macara will have no effect on the Southern planters. The fallacy was detected at once by those who listened to it at Memphis, and fortunately Private John Allen of Mississippi was there to draw his own comparison. He said the European criticism of American methods of raising cotton reminded him of the old lady whose ideas of managing a family were publicly disparaged by a young male member of her church. Pointing her finger at him she shouted, "Young man, when you are the mother of thirteen small children, you will know better than to talk to me in that way." When our European critics have had experience in working a cotton plantation in the South, they may show more consideration for the man who raises but half a bale to the acre and wants 15 cents a pound for it.

BALING COTTON.

The American cotton bale came in for the usual amount of denunciation during the excursion through the South. While it had no defenders, the inspection of the Southern system of ginning, baling and compressing convinced many of the visitors that something besides agitation and abuse is required to remedy the present difficulty. That system has developed with the growth of cotton raising to its present great dimensions and, bad as it is in some respects, it is after all suited to the general conditions throughout the cotton belt. It is taking care of the crop and must be retained until a better system is provided. That is a problem for the inventor and mechanical engineer.

The European delegates pointed to the

superior manner in which Egyptian, Indian and Nigerian cotton is baled and to the fact that this cotton was baled by English machines that could be easily brought to America. Why are they not used here? Certainly not because the South is unwilling to adopt improved methods. There is not a section of the cotton belt where new presses would not be quickly installed providing it was shown that they would pay. This has not yet been done, and while we are without the data to warrant a decided opinion, the results of some enquiries indicate that the obstacle consists in the high cost of the European gin compresses, which makes impossible their general introduction throughout the American cotton belt. The improvement of the American bale can be effected only by devising some process specially adapted to American requirements. The cotton gin, the ring spinning frame and the power loom were invented about the same time, over a century ago, but while machinery and processes of manufacturing have been greatly developed since then, the mechanical processes of ginning and baling have remained almost stationary. The inventor and the engineer should get busy in the South. In the meantime those in charge of baling and compressing Southern cotton might improve matters a good deal by using present appliances to better advantage.



The excursionists watch the circus parade at New Orleans.

THE MIDDLEMAN.

So much had been spoken and written about direct trading between planter and spinner and dispensing with the middleman that Private John Allen in his speech at Memphis said he had come to the city intending to hire a lot of husky but idle middlemen to work on his plantation at Tupelo, Miss. To his surprise he found on his arrival that it was only the illegitimate middlemen who were to be dispensed with, and that all were claiming they were legitimate and hanging on to their old jobs. The conference at Atlanta and the trip through the South did much to clear the air regarding this question of direct dealing. It is now generally recognized, even by the loudest shouters for direct dealing between planters and spinners, that the middleman is doing necessary work in the cotton trade. If the

planter and spinner dispense with his services they will have to do that work themselves. Doubtless the steady increase in the financial resources of the planters, and the building of cotton warehouses throughout the South will lead to some modification of the present system in which there are many serious evils bearing on both planter and spinner. But the work of collecting, sampling and classifying cotton in large quanti-

Raising Galveston above high water mark. Sand and water from the harbor bottom is pumped onto the island.

ties for selection by the spinner must be done by someone.

PRICES.

Along with the middleman the subject of prices for cotton emerged into a clearer atmosphere because of the conference. The planter wants all he can get for his cotton, just as the spinner wants all he can get for his yarn; the weaver, for his cloth. The planter's ideas of price are bound by no arbitrary limits. He shouts for 15 cents now and would gladly see it go higher, but if conditions require it will sell for less. "Fifteen-cent cotton" is merely a rallying cry. It may mean 20 or 10 cents; it does mean the highest prices obtainable. Time is working for the planter. He is steadily growing richer, better able to hold his cotton and distribute deliveries over the twelve months of the year instead of crowding them into five or six months. His ambition, as stated by a leading planter at Atlanta, is to transfer the ownership of the world's visible stock of cotton from the dealers and speculators to the planters themselves. In other words, the financial support for the stocks of cotton at Liverpool, Bremen, New York, New Orleans, Memphis and elsewhere, is to be provided by the men who make the cotton. This is their ambition. Will it be realized?

COTTON EXCHANGES.

The Atlanta Conference and the discussion along the way resulted in showing that cotton exchanges, imperfect though they unquestionably are, still have their uses. An excellent effect was produced by the presence at the conference and on the excursion, of representatives of the Liverpool, Bremen, New York and New Orleans Exchanges, who freely discussed the problem of exchange trading and the evils charged against it. This system of trading has grown up

with the cotton trade. To destroy it at one stroke would bring disaster. What should be done is to study the problem carefully and correct abuses in the way that then seems best. The conference passed a resolution on this line, but the most encouraging development was the discovery that an influential reform party had been formed some time ago in the New York Exchange itself, and was actively working for a change of methods in that institution. In an early issue we intend to publish a report of a committee representing this party, in which is outlined plans for bringing the New York Exchange into closer and more harmonious relations with the planters and spinners, and reducing the existing evils of speculation.

THE WORLD IS NOT ALL COTTON.

At Chicago the travelers suddenly discovered a marked change in popular opinion. Before that almost every speech and conversation hinged on the cotton question until it seemed as if this were a world of cotton and that all of its really serious questions related to the growing of cotton and the manufacture and sale of cotton goods. At Chicago we found other problems were claiming attention and at the banquet there one prominent citizen at the head table actually admitted to Mr. Macara that he knew very little about the cotton industry and was wondering what this large delegation from Europe was trying to do anyway. This ignorance elicited a gentle rebuke and an effort was made to give to the guilty one a fitting idea of the importance of an ample supply of cotton to the world and especially to Lancashire. All in vain. We had left the cotton belt and were with a people whose lives, and country, and sacred honor depended on other things besides cotton. The visitors all felt the influence of the change and yielded to it, apparently relieved to abandon the role of specialists and become ordinary human beings again.

The habit of investigation, however, still persisted, Packingtown becoming the special object of it. Special arrangements had been made for the visit to the stock yards, and it happened to fall on "Kosher" day. The sight of dumb animals slaughtered for food is bad enough under the most humane conditions possible. The visitors from Europe, old and young, among them several ladies, saw such slaughter under the worst conditions, and have carried back to their homes a sickening sense of the cruelty that is possible for the sake of conscience—and dividends. Delegates from a number of Continental countries said that such methods of killing had long since been prohibited by their governments on the ground that it was extreme cruelty to animals. As done at Chicago, the beast is driven through a long, narrow passage adjoining the slaughter house, and, thoroughly frightened by the bellowing and the smell of blood that fill the air, makes frantic but vain efforts to turn back and escape. Finally enclosed in a narrow stall it waits its turn. A man fastens the rope from a windlass to its hind feet, and grasps its nose firmly with a long pair of clamps or tongs. The side of the pen falls away, the windlass makes a few turns, raising the hind quarters of the animal and bringing it into the slaughter house with its head dragging through the blood and gore that covers the floor to the depth of an inch or more. The animal, in full possession of all its senses, sight, hearing, smell, taste and feeling, has its head firmly twisted by the clamp until the lower part of its neck is in a well exposed position, and then a man draws a long, sharp knife across its throat, making a slit six or eight inches deep. A torrent of blood gushes out, the windlass turns again and the animal with its eyes still open, expressive and rolling in their sockets, is raised struggling and kicking clear of the floor, and by an ingenious mechanism is made to take in Indian file its place in a long procession of its fellow creatures that have suffered the same fate. This is the operation of killing cattle, practiced at Chicago, but prohibited in several countries of Continental Europe. At one of the packing houses an attractive lunch of which beef was the piece de resistance was served, but at that time few of the party felt hungry enough to do it justice.

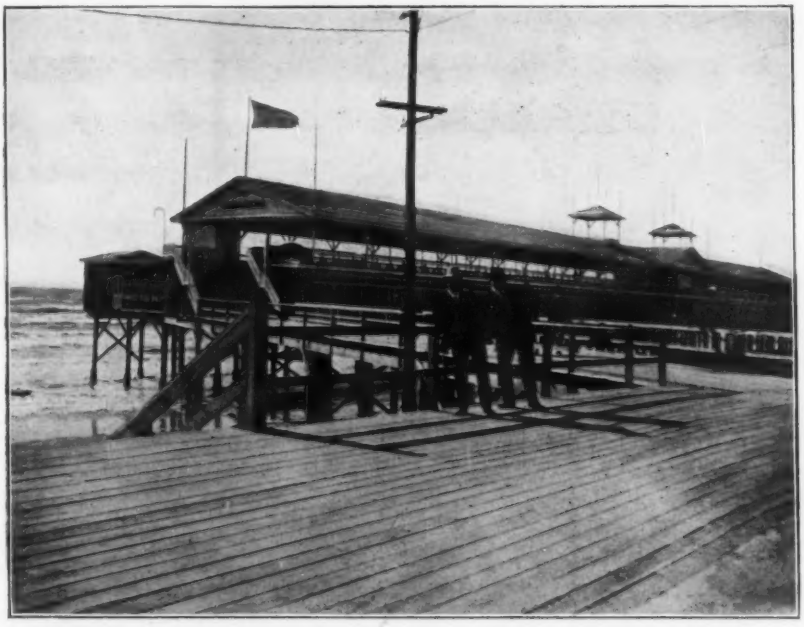
At the banquet that night Mr. Macara told of his independent investigation of Packingtown, made that day with the aid of United States government officials and the owners

of the slaughter houses. He said that owing to the agitation some time ago over conditions in Packingtown, he had considered it his bounden duty to investigate these conditions for himself in order that he might go back to Lancashire and tell his countrymen whether everything was as it should be at Chicago. Manchester, he said, was the centre of the most densely settled portion of the earth, and it was of the highest importance that that vast population of workers should be supplied with cheap and wholesome food.

Here was a new issue. After struggling for weeks with the apparently insoluble problem of how to satisfy Lancashire with a supply of raw material for her mills, we were suddenly confronted with another and even worse problem, how to supply the people of Lancashire with meat. The feeling of depression, however, was short lived, Mr. Macara hastening to explain that his observations that day, under official auspices, had convinced him that there were no grounds for complaint in regard to the methods of inspection, slaughter, dressing and packing of meat products at Packingtown. Some of the buildings were rather old, and the appliances in them were not as complete and satisfactory as in the new establishments, but this was not a vital point, and he was glad to be able to assure his people of the satisfactory conditions he had found. Manchester was satisfied—and so were we all of us—to let the investigation of Packingtown drop right there.

CANADA.

At Toronto we again found ourselves somewhat outside of the cotton world. The Canadians were very glad to see us and we all sang "God Save the King" with especial fervor under the Union Jack, but our hosts looked at us with a rather puzzled expression that seemed to say, "What is the object of this extraordinary excursion from Europe through North America?" It was all explained to their apparent satisfaction at the banquet, and we left in Toronto the impression that "this, the most important industrial delegation that ever visited America," was not only solving industrial problems of the first magnitude, but was promoting in a marked degree the Parliament of Man and the Federation of the World.



Mr. Byrom and Mr. Whittaker, of Manchester, Eng., take a whiff of the sea breeze at Galveston.

AUF WIEDERSEHEN.

Most gratifying was the uninterrupted course of hospitality extended to the European visitors during their entire trip through the country. Everywhere there was the same warm hearted, sincere, friendly greeting. It was the writer's privilege to pass through it all and nowhere did he detect the slightest suspicion of anything other than kindness and good will to our foreign friends. As an American he is especially gratified by this undiluted friendliness shown to our recent visitors, and in that same capacity he feels privileged to call attention to one mistake we made. Even in this mistake there was no lessening of our kindly feelings, in fact it often gave those feelings a stronger expression, but a mistake, nevertheless it was, our almost continual boasting of the natural resources of this country, in spots and as a whole. Every place we visited, and some that we didn't, was either the greatest this or the greatest that, or was the centre of some section that was the greatest this or that. At first we were told that South Carolina was not only the greatest State in the greatest country on earth, but that Greenville in particular was the real centre not only of that State, but of the universe. The visitors, listening with some surprise, concluded that other places to be visited must take their places in a descending series. Not at all. For nearly three weeks we were to live in the superlative degree. Atlanta was the centre of the cotton belt, the predestined centre of the cotton world. Birmingham was the greatest iron centre on earth, and would be producing cheap metal when all other mines were exhausted. Another Greenville was the centre of the best cotton growing country on earth. New Orleans was the foreordained metropolis of the cotton trade. Galveston was the greatest cotton port on earth. Houston threw Galveston in the shade. Texarkana was the real centre of the American cotton belt, and Little Rock was the clothes-basket of the world. Memphis was the largest spot cotton market with the largest warehouse on earth. St. Louis was the greatest cotton market in the world. Chicago was the centre of the greatest railways in existence, and when we reached

The delegation in the market place at Texarkana, Arkansas.

Toronto we found ourselves in the greatest city of the greatest province of the greatest colony of the greatest empire on earth.

There was something ludicrous about the special credit these speakers seemed to arrogate to themselves for the natural wealth of their respective localities. This bragging was invariably done by someone who was a native born in the section he held up as the best. If it had been by those who had left some other part of the world to settle in the and called home. It finally got on to the nerves of one of the visitors and in a response to a local boomer's salute he shouted back a protest ending with: "England, my homeland, I love the best."

At Memphis Private John Allen relieved the strained nerves of the visitors perceptibly by humorously calling them to task for not having visited the one greatest place in the cotton belt, Tupelo, Mississippi. "I know what's going to happen," he cried. "You will

Mr. Smethurst of the English Federation studies the cotton question at close range.

best part, a certain credit might have been conceded for good judgment in selection, but why should a man, even by inference, claim credit for the natural resources of his home town, city or State, in which he had been placed without his knowledge or consent?

There was nothing strained about this flow of brag and buncombe. It was free as the air and dispensed as if it were the word in season. Intended simply to emphasize the advantages of the various sections of this country its most marked effect on the visitors was to belittle the countries they loved go back to your homes and have it continually thrown in your faces that you didn't go to Tupelo." This was the only relief to the three weeks' strain of boomer's speeches, which were made with the best of intentions, but which were, nevertheless, a great mistake.

There is no doubt but this is a country of vast natural resources, but why this vociferous reiteration? Moreover, we are the beneficiaries, not the creators of those resources, and the only credit we can rightfully claim is that we use them to the best advantage. During the recent visit of the Europeans loud

boasting over these resources was especially out of place, because everyone knows that in cotton growing we are not using our opportunities to the best advantage, and that we are actually begging foreigners to come here and help us. Moreover, without making any comparison between individuals, it is undeniable that our recent visitors represented peoples that, measured by industrial and commercial achievements, had left Americans far behind in the cotton trade. In fact, the development of our cotton industry has been possible only because of what has been accomplished by the inventors and engineers of Europe. And the same contrast is found in many other fields of human endeavor, not only in commerce and manufactures, but in science and the arts, while we must acknowledge the great debt we owe to Europe for our language and free political institutions. After all, what are we but the pampered pets of fortune in her most indulgent mood? As for Europeans, they are up against the real thing all the time, and have had their minds and bodies strengthened by the struggle for existence with nature in her most niggardly mood. It is for us to be on guard lest we grow soft under these American conditions. Pride in one's country or home is a great virtue, and if a really genuine article will prevent the vulgar booming that is now epidemic. Too much bigger, better and busier business may conceal a rottenness at the core.

Aside from a passing resentment at the implied reflection on foreign places our European visitors took our boasting good humoredly, and will doubtless have many a merry jest over the numerous biggest and best places they saw in America. When they come again, which we trust will be soon, let us hope that our visits to their countries in the meantime will have given us a better idea of the proportion of things "on this grain of sand we call the world," and that we shall then have less reason than now for any lingering regret.

The ill-timed truth we might have kept—
Who knows how sharp it pierced and stung!
The word we had not sense to say—
Who knows how grandly it had rung!

Style Suggestions for Woolen Manufacturers.

The duplication of light weight goods and the retail sales of heavy weights, have usually, by this time, progressed far enough to forecast the most desirable fabrics to make, but many of the leading clothiers are at a distinct variance in this respect.

While some of the mills report a large business originally on kerseys and large duplicates, others report no business, and after a careful examination of these reports, it is seen that the mills which have kept the standard of their fabrics up have had a large business, even at the advanced price which had to be charged, while those which have made a fabric to sell at a price and cheapened their standard are looking for business.

In the line of fabrics suitable to make for the coming fall season, the overcoating which stands at the head is the kersey. In former years this was made in one weight, twenty-nine ounces, but with the education of the different sections of the country in fabrics, each one requires a different weight, so that a greater variety is used, the twenty-two ounce fabric for the South, the twenty-four for the Philadelphia, Baltimore and Cincinnati markets, the twenty-six ounce fabric for New York, the twenty-eight ounce fabric for the West and the thirty ounce one for Boston and the East.

The various weights are all in demand in the men's wear trade if the fabrics are made right. The twenty-two ounce cloth can be made in different grades from $1.25 to $2.50 and if properly stocked and finished will sell, for this weight is not only used for light weight overcoatings but for suits and also for shells for fur coats. The cheaper grades of course have the larger sale, but there is also more competition here. Last year there was one fabric in a twenty-two ounce weight at $1.30 which had a very large sale and before proceeding on a fabric around this price it would be well to secure a sample of this. The only colors required in this weight are black, blue, brown, olive

and if possible two oxfords, one of about two per cent. and one of about five.

The same standard in regard to stock and finish apply to the twenty-four, twenty-six and twenty-eight ounce cloths as to the twenty-two ounce one, but in the better grades a larger variety of colorings is demanded. While it is true that black always outsells any other shade it is not well to depend on black alone, for the buyers are not going to buy all blacks from one manufacturer and take a chance of getting their colors elsewhere.

The most popular price in these three weights is $1.25, and right here is where the maker who can produce a good kersey at this figure, will have all the business he can handle. The Solucholas kersey was for a long time the standard $1.25 fabric and was made all the year around in season and out, but owing to the advance in raw material and the fact that no substituting was done in this fabric, but the standard kept up, it now sells in the neighborhood of $1.40 and consequently the garment made from it goes in a different class from the $1.25 fabric, and so leaves a place at this figure for the manufacturer who can produce a fabric at this figure.

Many creditable attempts were made during the past season, or at least they seemed like such, until investigation showed that the fabrics being placed at this price had been made for a higher figure and were being sold out of stock.

This was true of one of the largest woolen manufacturers in the country and their pitfall like that of almost any manufacturer who starts to make these goods is the finish. What this requires above all else is patience, a kersey needs time to get the lustre, and if it has not lustre it is classed as a beaver or a melton and not so desirable.

While plain goods are the largest sellers still there is a great demand for fancy kerseys and these are usually made in stripes. Many pretty effects are obtained by using styles of grey on dark ground and stripes of black on dark and light grey. The browns are also striped with darker or lighter shades of brown, which produce fine effects and one of the largest sellers in a standard make of kerseys the past season was an olive brown striped with a narrow pencil line of black.

The smoke shades are coming back in the better grades as are also the medium tans and the olives, and blue and white mixes, also the brown and white and olive and white mixes. These have had a fair sale the past season but the indications are for a very much larger one.

The ideal kersey is a true double cloth using an Australian face and an Ohio wool fabric. This combination produces a fabric which will take a high lustre, and the double cloth is much preferable, there being a great prejudice against a warp back fabric on account of the tendency to be tender.

While kerseys have always sold it is only the standard fabrics and those in which the standard has been kept up that sell year in and year out poor season and good alike.

Some few years ago the fancy overcoating sold very largely but for a time the plain fabrics have had first place and with the increased cost of these, there comes a demand for a fancy coating, this allowing a more sightly fabric to be made for less. Last fall one of the most successful overcoating fabrics was a twenty-four ounce all wool one made by the Appleton Co. This in dark oxford herring bones mills sold for $1.15 and the lighter colors in which white wool was used brought $1.30. This fabric sold well with many of the trade and as the mill was sold up they were made to fill their requirements. Many of the trade are of the opinion that these fancy coatings will sell big, but a greater variety of mixes and colors will be demanded. The brown and olive mixes and some of the dark green olive mixes will be wanted.

Another overcoating fabric in the fancy line which had a good sale and will be in demand again was the fabric made by the Camden Woolen Co. This sold around $1.25 and was excellent value.

Melton overcoatings have not had the sale for some few years they have formerly had but there is a growing demand for this fabric and particularly for blue meltons. While it may seem difficult to make a fancy melton such a line was brought out last season by

Jas. and E. H. Gilson, and suggested possibilities of a very attractive line.

The fabric they made was either a black and an oxford melton striped in various widths with a mohair striping. This idea can be developed in the blue and brown meltons, the mohair stripe must always harmonize with the ground work of the fabric.

Along the line of fancy overcoatings the vicunas should not be omitted. There is a growing demand this fall for these in browns and olive mixes, but they were not made in these, and as the demand is unsatisfied it is reasonable to suppose that this will still continue next season.

The fine vicuna overcoatings made by the Globe and the Wanskuck Co.'s are fair examples of the coming style. The faint filling roll stripes are excellent, but here as in all other fabrics the tendency is away from the light and dark oxfords which have had such a long sale and towards the browns and olives, particularly the darker and medium shades.

Venetians and coverts are like kerseys, always staple, and here as in the kerseys, those manufacturers who have kept up the standard are the ones who are getting the business.

Coverts had an immense sale and the natural result was that a great many mills made them, the supply exceeding the demand until large stocks were piled up and not only by the manufacturer. These "undigested" stocks have at last been used and the demand comes for coverts, and the standard makes will get the business. This is a fabric which, from the very nature of it, is likely to run streaky and one which a manufacturer should be cautious about starting on. Here as in all fabrics the olives and browns will be in demand and there is large demand for stripe effects. The standard makes range in price from $1.17 1/2 to $2.25, for fifteen to sixteen ounce weight fabrics, and the heavy weight fabrics which are considered standard are those made like the "Waterloo."

With the coming of the automobile there has also been a demand for whipcord fabrics and those made by the Globe in tans and oxfords at $2.75 are usually considered standard; but these are too high priced, not that the value is not there, but that they figure too high in the garment and so there is a demand for a twenty and twenty-four ounce fabric for about $2.00.

One of the latest novelties in coverts is the revival of the old fancy back, not the regular double cloth fabric, but one in which a fancy stripe effect is produced on the back by an extra warp thread floating on the back. A very attractive light weight line at $1.17 1/2 has been shown and a fabric developed along these lines in a sixteen ounce weight will sell, using for a face coloring the regular covert shades, and particularly the new stone and olive brown shades, which are coming into vogue.

With the demand for fur coats there is also one for the bear skin and broad tail and various other effects, but these fabrics can only be produced on special machinery by embossing, and even if a manufacturer can produce them up to the finishing he will find here he is more than handicapped, for the machinery for producing these various bear skin and broad tail effects is manufactured in Germany and could only be imported at large expense and when landed here the fabrics would probably be out of style. The John and James Dobson Co., Sydney Blumenthal & Co., and the Salts Textile Co. are about the only manufacturers fitted to do this work and as they are busy on their own work are not in a position, either willingly or otherwise, to finish these for other makes.

Another specialty fabric relating to the fur coat business is the imitation Persian lamb. This is made in two ways and principally at two prices, $1.00 and $1.75. One way is the woven fabric and the other is the knitted, which is much the better. These fabrics sell very large and the best one is made by the Pioneer Woolen Mills or the Western Robe Co.

While the duplicates on light weight suitings have been principally on hard finish worsteds, the hard finish cassimeres have also had a good sale, and strange as it may seem the general impression of the trade is that cassimeres will have the largest sale for fall.

There were many fabrics of excellent value

last year and particularly the Chase at 97 1/2 cents, the Brickner fabric at $1.05, and the Gilbert and Pondicherry fabrics. These were all excellent ones and are good examples of what will be in demand. The styles, however, must be bright and snappy, and the colorings the blues, olive browns and browns and olive green mixes. The general tendency is toward stripe effects, especially those in which a ground check with a stripe over it is used, but by all means keep away from the Club check; these are dead.

Some of the Western mills such as the Menesha, the Beaver Dam, Curtiss & Warren and Appleton and Sheboygan Falls have made fabrics which in wool goods are far ahead of the Eastern manufacturers and well deserve careful study.

Hard finish worsteds will sell and the variety of styles and colors are about the same as indicated for cassimeres. However, in the medium grades the Earnscliffe and the Shaxamaxon fabrics were the best put on the market.

While hard finish worsteds will sell away ahead of the unfinished worsted fabrics, one with a finish such as the Globe made in light weights will be in demand in neat and fancy stripe effects.

Quite a business was done last fall and the present spring season in unfinished worsteds in cross dye work. This is a method of obtaining fancy effects which deserves the attention of the piece dyers.

Thibets, while still selling, are not as much in demand as formerly and will probably be less so.

In the cloak and suit trade there is a large demand for broadcloths, fancy and plain, and the number of lines of this fabric is simply appalling. This condition will, without doubt, put a finish to the demand for broadcloths for a time, as it has done to everything else which has been produced in every conceivable price and style of fabric. It is well for the manufacturer to reflect very well before making this fabric.

What the cloak and suit trade want is bright snappy stripes in worsted and wool goods.

THE JAPANESE TEXTILE INDUSTRY.

Kobe, Japan, Sept. 27, 1907.

Editor Textile World Record:

Your letter of July 24, 1907, addressed to Henry B. Miller, American Consul-General, at Yokohama, asking for detailed information regarding Japanese cotton mills, has been referred to me for answer.

In reply I would state that the Japanese mills principally go in for ring spinning and where mules are used they are being gradually superseded by ring frames, these being best suited to this country as the yarn mostly in demand is seldom above 20s. There is, however, some yarn as high as 60s and even 120s being spun to meet the growing demand for finer counts.

The machinery employed is chiefly of British make, but the Japanese are now turning out warping and winding machines, reels, bundling presses and looms and there is great likelihood that a ring frame of Japanese design will shortly replace the imported article.

There has been a marked growth in both the spinning and weaving industries exhibited during the past year. Profits are said to be phenomenal and a marked increase in the number of spindles is the result. The mills claim to be sold well ahead and have contracts which would keep the spindles busy all this year.

The expansion of these mills has greatly affected the local market for foreign goods and there is no doubt that in the near future ordinary gray goods will be exclusively manufactured by native mills, though the better class, nine pounds weight, may continue to be imported for some time to come.

Since cotton drills and ducks can be made here, it is not likely that these goods will be imported to any great extent in the future. Cambrics or gassed shirtings, also white shirtings, are not as yet turned out by the Japanese weaving establishments.

The standard cloth manufactured in Japan is a light weight cotton print, 14 inches wide, which finds a ready sale among the natives.

So far as the inferior classes of goods are

concerned, Japanese spinners will not only shortly monopolize the domestic market, but will greatly increase their exports in this line of goods to neighboring Asiatic countries, while much progress in a similar direction may be expected with the superior lines as well.

The latest figures published by the Department of Finance are for 1905, and are herewith submitted in the following tables:

COTTON MILLS.

Number of cotton mills	78
Gross amount of capital invested	$18,421,557
Average number of spindles worked daily	1,402,931
Quantity of raw and ginned cotton required ..... lbs.	418,362,614
Total production of cotton yarn ..... lbs.	365,536,499
Waste cotton ..... lbs.	41,930,678
Waste cotton yarn ..... lbs.	3,829,201
Average price per bale of cotton yarn (398 lbs.) ..	$62
Average number of male operatives daily employed	12,183
Average number of female operatives daily employed	53,728
Annual working days	325
Daily working hours	20
Average daily wages of male operatives	$0.179
Average daily wages of female operatives	$0.110
Quantity of coal consumed, tons	446,834

SILK, WOOL AND COTTON TISSUES.

	Quantity. Tons.	Value.
Habutai (silk)	3,762,014	$12,963,850
Kaiki (silk)	818,674	1,548,548
Crepes	980,591	3,734,617
Cotton goods	80,749,650	24,704,399
Cotton flannel	4,525,271	6,311,421

WOVEN GOODS.

Weaving houses	448,609
Power looms	18,420
Hand looms	715,755
Male operatives	36,118
Female operatives	731,305
Silk	$26,646,017
Silk and cotton mixed	4,693,280
Cotton	32,812,478
Hemp	1,398,097
Japanese sashes, silk	1,503,170
Japanese sashes, silk and cotton mixed	1,219,351
Japanese sashes, cotton	276,103
All other	7,762,033
Total value	$76,311,026

Respectfully,
HUNTER SHARP,
American Consul.

MOISTURE IN WORSTED YARN.

Editor Textile World Record:

I herewith present data of conditioning tests made on various lots of worsted tops in the Philadelphia district. As will be seen at a glance the average for this territory is about 12 per cent. of moisture. But whether 12 per cent. or 15 per cent. or the European standard of 18 3/4 per cent. be chosen as the American standard, is, in my opinion quite immaterial, for the price of worsted tops or of any other material is regulated in all cases by the amount of "bone dry" material which the seller knows or estimates the lot to contain. It would certainly be very wise to strive for uniformity and adopt a standard which is in use by the greatest number, namely 18 3/4 per cent.

RESULTS OF THE TESTS.

		per cent.
1.	High grade combed in oil ..	13.8
2.	Medium grade combed dry ..	13.5
3.	Low grade	15.82
4.	Sample direct from comber ..	9.2
5.	In oil	12.8
6.	In oil	12.0
7.	In oil	11.3

Delaware.

Of the 39 million dollars' worth of laces and embroideries imported into the United States in the fiscal year ending June 30, 1907, 5 millions came from Germany, 6 1/2 millions from the United Kingdom, 12 millions from France, and nearly 14 millions from Switzerland.

THE LAWRENCE TEXTILE SCHOOL.

The Lawrence Board of Trade and Textile Council (made up of delegates from the different textiles unions) have voted unanimously in favor of a school that will teach textile branches, and have appointed committees with full power to act on this matter. The joint committee of the Board of Trade and Textile Council have devoted a great deal of time to this subject and have come to the conclusion that no city in this State needs a textile school more than Lawrence. They will ask the city government for an appropriation and will start the school immediately in the following subjects:

Loom Fixing: Monday, Tuesday, Wednesday and Thursday, 7.30 to 9.30 p. m.

Designing: Monday, Tuesday, Wednesday and Thursday, 7.30 to 9.30 p. m.

Weaving: Monday and Wednesday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Practical English: Tuesday and Thursday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Textile Calculation: Monday and Wednesday, 7.30 to 8.30, 8.30 to 9.30; Tuesday and Thursday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Arithmetic for Firemen and Engineers: Monday and Wednesday, 7.30 to 8.30, 8.30 to 9.30; Tuesday and Thursday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Practical English: Monday and Wednesday, 7.30 to 8.30, 8.30 to 9.30; Tuesday and Thursday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Cotton Goods Manufacture: Friday, 7.30 to 9.30 p. m.

Woolen Goods Manufacture: Friday, 7.30 to 9.30 p. m.

Arithmetic for Firemen and Engineers: Monday and Wednesday, 7.30 to 8.30, 8.30 to 9.30; Tuesday and Thursday, 7.30 to 8.30, 8.30 to 9.30 p. m.

Steam Engineering: Friday, 7.30 to 9.30 p. m.

The course of study is made out to meet the daily needs of workers, as determined by an investigation. The schedule is arranged so that a worker can take loom fixing, weaving or designing two nights a week and practical English and textile calculation the other two nights and still be ready for the lecture on cotton or woolen cloth manufacture.

The courses on cotton cloth and woolen cloth manufacture will be sixteen lectures on cotton goods manufacture from the raw cotton to the finished product and sixteen lectures on woolen cloth manufacture from raw state to the finished product. Under the head cotton cloth manufacture the lectures would be on the following subjects: 1, Cotton Growing and Ginning; 2, Cotton Stapling, Mixing and Picking; 3, Cotton Carding; 4, Drawing and Doubling; 5, Combing; 6, Fly Frames; 7, Frame Spinning; 8, Mule Spinning; 9, Preparation of Yarn for the Loom; 10, Plain Weaving; 11, Fancy Weaving; 12, Employment of Steam in Textile Mills; 13, Bleaching; 14, Dyeing; 15, Printing; 16, Finishing. The subject of woolen cloth manufacture will be treated in a similar way.

These lectures will be given by practical men in the various lines, who are experts, and will be planned to meet the immediate needs of the workers and to make clear the fundamental principles governing the processes and machinery of the cotton and woolen business.

The lectures will be given by different men and will be illustrated by lantern slides, showing materials and machines and every worker, whatever his position may be, will be able to understand the principles of his own work, and obtain a clear insight into his own work and the relation of his work to that of other departments.

This school will be open to those already in the trades so that the workers will not be in with boys. Most mechanics and textile workers are very sensitive about any reflections which boys are apt to make regarding the deficiencies of the former in the simple branches of knowledge.

The new textile school will be governed by a local board made up of representative citizens, mill men and workers, supervised by the Mass. Commission on Industrial Education and supported jointly by city and state, each paying one-half, and has been established under legislative authority.

REPORT OF THE COMMITTEE ON TRANSPORTATION AT THE ATLANTA CONFERENCE.

The committee appointed to consider the following questions under this head, viz: (1) Country Damage, (2) Warehousing, (3) Transportation, (4) Insurance, make the following report:

(1) Country Damage, (2) Warehousing. It was reported that the various cotton associations and Exchanges of Europe had on many occasions during the last two years pointed out to their principal correspondents in America the very harmful effect that country damaged cotton had on the cotton trade as a whole, and suggested that active efforts be put forth so that those responsible for the handling of the cotton from the time it leaves the farm to the time it is shipped be made aware of the serious position arising therefrom.

These communications do not seem to have had a very marked effect for the committee learn that the quantity of country damaged cotton in the European imports of American cotton last season was in excess of those of the preceding season. The report of the protective committee of the Manchester Cotton Association for the season ending 31st of August last, shows that the percentage of American cotton importations landed at the Port of Manchester in a damaged condition amounted to over 6 per cent., compared with over 5 per cent. the previous season and but 3/4 of 1 per cent. in the season 1903-4. It was pointed out in contrast that the importation of Egyptian cotton to Manchester during the last season showed only 1 per cent. in a damaged condition.

The committee passed the following resolution:

RESOLVED: That it is to the interest of all parties from the grower to the consumer, that greater care be exercised in preserving cotton in transport from the effect of weather and to enable this to be done this conference feels that every effort should be made to extend warehouse accommodation for cotton in America.

It was reported by a member of the Farmers' Union that his organization had adopted a trade label, the aim of which was to identify the grower and the warehouse in which each bale of cotton had been handled by the union. Each label would also show the gross, tare and net weight of the bale.

RESOLVED: That in the opinion of this Conference the adoption of (such) labels, stating the grower, the warehouse, the gross tare and weight, is conducive to the reduction of country damage.

(3) Transportation. This subject the Committee considered under two heads, viz: (a) Bills of Lading. (b) Manchester Ship Canal Co.

(a) During the early part of the past season the rapid movement of the crop in America caused congestion upon the railways at many interior points of shipment. The practice of ship owners or their agents signing bills of lading for cotton which was not in their possession as shipped by specified steamers, thereby conveying the idea to the minds of the buyers that the cotton was already in their hands and would sail within reasonable time, caused great inconvenience and loss to importers by reason of the goods failing to reach the ports, in many cases for months subsequent to the dates of the bills of lading, and called in question the value of such bills of lading as collateral security.

So acute did this evil become that an immediate remedy was imperative, consequently a conference was organized of the various commercial associations (representing Exchanges, Bankers, Underwriters, Ship Owners, and Cotton Spinners), and was held in England on the 24th of July last. (An account of this has already been given in this journal.)

THE MANCHESTER SHIP CANAL CO.

(b) The attention of the Committee was called to the fact that the Manchester Ship Canal was constructed to bring, among other goods, cotton direct from American ports up to the doors of the spinners in Manchester and that a considerable saving in cost could be made by adopting this means of transport.

RESOLVED: That the attention of the planters and others interested in the

shipment of cotton from American ports to England be directed to the Manchester Ship Canal as a medium for direct delivery of cotton from the grower to the consumer.

(4) Insurance: The Committee finds that some marine insurance companies issue policies which contain the following clause: "It is further understood and agreed that this policy shall not insure by any one steamer a sum exceeding $100,000 or more than $125,000 against the risk of fire in any one place at one time."

RESOLVED: That it be of the highest importance that in entering into C. I. F. contracts for the current season buyers should stipulate that their goods shall be insured with companies whose policies do not include the above clause.

For the Committee,
SIDNEY COOLIDGE,
Chairman.
RICHARD J. ALLEN,
Secretary.

EQUIPMENT OF A COTTON MILL.

BY BOLSTER.

[A correspondent sent us a sample of cotton cloth with a request for information regarding the lay-out of a mill to produce 10,000 yards of the goods per day of 10 hours. An analysis of the cloth gave the following results:

Warp, 57.7 threads 24s cotton per inch.
Filling, 48 threads 34s cotton per inch.
Weight, 5 2/3 yards, 39 in. wide, per pound.

The question was submitted to "Bolster," and his reply is given below. Ed.]

From the analysis of the cloth submitted, I estimate that it will require 184 looms running about 180 picks per minute to produce 10,000 yards per day, or approximately 58,000 yards per week.

This would require approximately 4,000 pounds of 36s filling yarn and 6,300 pounds of 26s warp yarn per week, with the following preparation:

Machines.	Size.	Ends fed.	Approx. draft.	Approx. lbs.
1 breaker picker	14 ozs. per yd.		1½	12,550
1 intermediate picker	13 " " "	4	4.2	12,240
1 finisher picker	12.5 " " "	4	4.1	12,000
16 cards	65 grns. " "	1	80.0	11,840
14 finisher D. F. deliveries	65 " " "	6	6.0	11,200
1 slubber of 80 spindles	.5 hank rov.	1	3.84	11,040
1 intermediate 100 spindles	1.00 " "	2	4.0	6,600
1 intermediate 84 spindles	1.20 " "	2	4.8	4,368
2 roving frames 168 spindles each	2.8 " "	2	5.6	6,530
2 roving frames 144 spindles each	3.3 " "	2	5.5	4,348
17 spinning frames 256 spindles each	on 26s warp	1	9.2	6,373
13 spinning frames 256 spindles each	on 36s filling	1	10.9	3,993

The belting may cost anywhere from $1,800 to $2,000, including main drive and counter belts.

The power department, including shafting, will cost from $10,000 to $11,000 dollars, making a total of approximately $75,000 for equipment.

The next table will give approximately the cost of the machinery and the horse power necessary to operate same; the prices given are on a basis of recent quotations, and refer to new machinery:

Machinery.	Cost.	Horse-power
1 breaker picker and feeder combined	$850.00	6
1 intermediate picker	700.00	4
1 finisher picker	700.00	4
16 revolv. flat cards at $650.00 each	10,400.00	16
42 drawframe deliveries " 60.00 "	2,520.00	10
80 slubber spindles " 14.50 "	1,160.00	2
184 intermediate spindles " 10 75 "	1,978.00	2
624 roving spindles " 6.80 "	4,243.20	8
7680 spinning spindles " 3.00 "	23,040.00	92
300 spooler spindles " 2.80 "	840.00	1.5
3 warpers " 250.00 "	750.00	1
1 slasher, with size kettle, and beam conveying track complete	1,450.00	1.5
184 looms	12,000.00	92
1 railway sewing machine	90.00	.2
1 brusher	550.00	1
1 folder	200.00	.5
1 cloth-press	500.00	2.3
Total	$61,971.20	244 h.p.

The supplies, such as bobbins, spools, cans, skewers, shuttles, beams, etc., must be added to this amount, and will vary considerably according to the quantity laid in stock. Estimating this at 10 per cent., the total cost will be about $82,500.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

WOOLEN CARDING—AMERICAN AND EUROPEAN METHODS COMPARED.

[We received recently a letter from a Swedish correspondent who desires information about the American methods of woolen carding in order that he may compare them with those used in Europe, his enquiries covering the following points:

The cost of a set of woolen cards of good make.

Working of machine.

Production in 10 hours of 1, 2 and 3 runs.

Number of mule spindles supplied by card.

Necessary help to run 5 sets of cards.

Number of spindles per operative in spinning room.

This letter was submitted to a number of our correspondents and the following replies were received: Editor.]

The carding systems of Europe and America vary considerably, but the principal difference seems to be in the amount of carding surface, the European carders using considerably more than we do. There is also a little difference in the general construction of the cards though that is very slight. A set of American cards may be changed over to the English system, if so desired, at very small expense, or vice versa.

Almost all English and European carders use a double first breaker, that is, with two cylinders on the one card with a full complement of rollers on each cylinder, the same as is used on single cards. They also use a large metallic breast on the first breaker or scribbler, usually about the same size as the doffer, and fitted with two workers, two strippers, and fancy, the object of this being to open up all hard lumps and deliver the stock in better condition to the cylinder. It also pulverizes any burrs, shives or other foreign matter that may have been left in the stock, rendering the card wire less liable to injury than if they were allowed to go through.

A slight modification of this system is sometimes used in American mills for heavy work only. It is done by backing the second breaker up to the doffer of the first breaker, and instead of using the doffer comb between, the stock is transferred from one to the other by means of an angle stripper placed between the doffer of the first breaker and the lickerin of the second breaker.

This system is to be recommended for heavy work and low stock, as it effects a great saving in labor and floor space, requiring much less room and no extra hand is needed to run the creels, or, if using self-feeds, to watch ends in the alley. It also does away with the side drawing and tube, the tendency of these two parts being to mix and cross up the fibres again and in some degree undo the work previously put on the stock by the first card. But this system is not to be recommended for fine yarns as the variation in weight and the unevenness of the yarn—resulting from their being no doublings between these cards—would be considerable.

In the European system the second breaker is dispensed with on coarse work for two reasons: On coarse work the stock is usually open and free and requires less carding than the finer grades of stock; then on the heavier counts of yarn the slight variation in weight and the unevenness of the yarn resulting from there being no doublings between first and second cards is not noticed. For fine work on this system, the second breaker is always used, and this, with the finisher card, gives four complete cards to a set, besides the metallic breast, which is very nearly equal to another card.

The third or finisher card on the English

system is similar to the American. It will be readily seen that the principal difference in the two systems is in the construction of the first breaker or scribbler card, though the principle involved in both systems is the same.

A set of American cards on the single carding system, and of standard make, usually consist of first breaker 40-48-60 or 72 inches wide, one cylinder with the usual complement of rollers and sometimes using a breast similar to the English breast, but in any case using either a single or double burr cylinder for the lickerin, on top of which runs a burr fan. By the aid of this fan about 75 per cent. of the burrs and shives are knocked off into a pan provided for the purpose and set just above the feed rolls and as close to the lickerin as possible without touching. There is also attached to this card the Bramwell feed, which automatically weighs and delivers the stock to the first card.

The construction of the second breaker is similar to that of the first breaker, but a diamond point is used instead of a metallic toothed lickerin. A self feed of the Kemp, Apperly or Bates type is very often used on this card to convey the drawing from the side drawing of the first breaker to the lickerin of the second. Often a creel or rack is used between these two cards. In this case the stock is delivered to the second card endways instead of diagonally, as in the case of the self feeds, which is consideed quite an advantage by some carders, as the stock going in straight does not need to be turned around again as is the case when it is delivered diagonally by the self feed. The self feed, however, is the handiest and cheapest to run. It is also the cleanest and gives the greatest production, but when the self feed is used on second breakers, good careful, even feeding is needed on the first breaker or bad uneven yarn will result on the finisher. The Bramwell feed should be carefully adjusted and the scale pan be quite sensitive to get the best results on this system.

When a creel is used, however, between these two cards a suitable machine is used to wind the drawing into spools or balls as it comes from the first breaker. A good machine for this purpose is made by the Torrance Mfg. Co., Harrison, N. J. This machine contains a reservoir with a capacity of twelve empty spools. As the spools are filled and thrown out into an iron box attached to the machine for this purpose, an empty spool is put into place automatically, the attendant refilling the reservoir about every half hour or before it runs out, and in turn piecing in full spools in the creel as they run down. This is a good machine for the purpose, as it winds the drawing into a flat, hard ball, taking up little space in the creel and permitting a great many more ends to be put in without being bulky and ungainly, resulting in better mixed stock and a more even yarn. A good attendant will run two or three of these creels and balling machines, depending pretty much on the size of yarn. The cost of the balling machine and creel complete is $270.

The finisher also is similar in construction to the first and second breakers, but instead of one large doffer being used and covered solid with wire as the large doffers are, they use two smaller doffers, 10, 11, or 12 inches in diameter, the 12-inch being most generally used, and clothed with fine wire rings set at the right distances apart. These take the stock from the main cylinder and in turn deliver it to the condenser in the form of a thin ribbon or web. These ribbons are taken from the ring doffers by corduroy covered wipe rolls and passed to the rub leathers, which rub them into a round, compact thread. After leaving the condensers this thread is carried on through a vibrating guide to the winding frame and wound on a rotating jack spool ready to be spun.

The foregoing is a brief description of the standard American card. A set of cards of this kind will cost $2,200 to $3,400, depending of course on the size of the machines; larger cylinders and greater widths increase the price.

The prices quoted are for a complete set of cards with hand feed on first breaker, an ordinary creel holding the ordinary slug spool for second breaker and condenser for finisher, either roll, combination roll and apron or double apron, but no self feeds

whatever or balling head creels are included in this price.

Two other feeds, the Bates and the Kemp, are used for either second breaker or finisher work. With the Apperly feed the traveler balls are run by friction and with the two other makes the travelers are driven positively by gears, which give an even strain on the drawing all the way across the card.

The price for a set of 48-inch cards complete, wooden cylinders and rollers and without self feeds, would be about $2,200; iron cylinders and rollers and sleeve bearings cost a little more. The cost of a set equipped with self feeds right through from first breaker to finisher, including Bramwell feeder on first breaker, self feed on second breaker, and the same for the finisher, would be approximately $2,600. The weight of a set of cards of this description, if equipped with iron cylinders and rollers, would be about 17,000 lbs.; with wooden cylinders and rollers the weight would be somewhat less.

The production of a set of 48-inch cards as above described for 10 hours should be about 250 lbs. 3 run, 325 of 2 runs and 450 lbs. of 1 run.

The necessary help to run five sets of these cards would be foreman, secondhand, two card strippers who could make themselves useful at other things after cleaning was done, one finisher tender, one boy to watch drawings and keep finisher alley clean, one boy to watch drawings and keep first breaker alley clean, and one boy to run Bramwell feeds. This would be sufficient to run five sets of cards, including the dusting and care of waste.

A set of cards of this size should supply 400 spindles. A man or good sized boy should run this number of spindles. One man has been known to run from six to seven hundred spindles. Richfield.

Good work in the picking room is essential to success in the card room. The burr picker should be kept in good order to open the wool thoroughly. The batch should be laid down in layers and made level at the four corners. The oil must be distributed evenly or the result will be uneven yarn; the wool that gets the oil will card out smooth and even, while the dry wool will be rough and light. The batch should be run through the mixing picker three times to give it a thorough mixing and prevent stripes in the finished goods. In the card room the self feeder must be in good working order or the roving will be uneven; the spike apron must be just tight enough not to slip, and the comb set with a 24 gauge. The weighing pan should work easily and the feed apron tight enough not to slip. The feed must be packed so there will be no holes in it, otherwise there will be uneven roving, the push board must come up to the beater and the beater must beat the stock up level and not push it down so as to leave an open space. The cards should have a short bevel point; the grinder should be set on very light and as it grinds set up gradually. The grinding should be done with great care. If the wire is hooked it will cause bad work and take a lot of money out of the company's pocket. I am running card clothing that has been in use for twelve years and it is just as good as the day I put it on.

On the first breaker I use a number 33 card wire; on the second, 34, and on the finisher number 35. The first breaker cylinders run 85 r. p. m. and the 30-inch doffer about 12. The workers are driven with a 5-inch pulley. The first breaker must be set with very great care or uneven work will result. The tumbler should be set as close to the cylinder as it will run without striking, and the lickerin as close to the tumbler as possible. The bottom roll should be set as near to the lickerin as possible, but should not strike the top roll. The top roll should be set by a 28 gauge.

Some carders give very little attention to the strippers, but they require as much care in the setting as the other parts of the card. I set the first stripper with a 28 gauge, the second a little closer, and the third a little closer still, and so on until the six are set. The first worker should not be set as close as the others because it gets most of the work and there would be too much strain on the wire. The second and succeeding workers should be set a little closer than the first. I set the first worker with a 28 gauge, and the others with 29, 30, 31, 32 and 33 respec-

tively. The strippers should be set up as close to the workers as they will go without striking.

The fancy, a very important part of the machine, should be set so that the cylinder will be clear, then if the fancy works well and the stock beats into the cylinder it shows the fancy is on too hard, and if the cylinder looks like a spider's web it is not working right. The only way to set a fancy properly is with a gauge; I use a 36 and listen when I start it up again. The stripper belt should be tight enough so the fancy cannot slip and the tumbler belt must also be tight; the doffers should be set to the cylinders just close enough not to strike. The creels on the second breaker should not draw too tight, or uneven work will result, the same being the case if they are slack. The breakers should be set with gauges 29, 30, 31, 32, 33, and 34. I have mine driven with a 4-inch pulley. Every other one is driven the opposite way and very slow. The object of this is to straighten the work better and catch all the bunches. The leader fancy, which is 8 inches in diameter, should be set as close to the tumbler as possible and on the leader enough to raise the stock.

The Apperly feed on the finisher is very important and great care must be taken to avoid uneven roving. If the stock goes in even it will come out even. The speed of the finisher is the same as on the breakers, with the exception of the workers; these should be run with a 3-inch pulley on the 12-inch doffer. The tumbler should be set as close to the cylinder as possible without striking, and the leader to the tumbler in the same way. The leader fancy should be set the same as the one on the second breaker. The setting of the worker and strippers should be a little closer than the second breaker. The ring doffers should be set to the cylinder with a 34 gauge. If the roving on the bottom doffer is a little light change the gear and drive a little faster; this will give the right weight. The wipe rolls should not take the stock from the rings too tight or too slack; this will cause twitty roving. A 12-inch doffer should be run with 12 r. p. m.

The cost of a set of woolen cards of good make, self feeders, is about $2,700. The production in 10 hours: 1 run, 275 pounds; 2 run, 550 pounds; 3 run, 825 pounds. The necessary help to run five sets of cards, with creels, would be five men, including second-hand and strippers. I am running 11 sets of cards with six men, including the second-hand and stripper. The number of spindles per operative in spinning room is 1,200.

Rodney.

The cost of a set of cards will be about $2,400. The 48 by 48 cylinder of these cards is all iron so there is no chance for it to warp and get out of shape as the wooden ones do. These cards are provided with a double apron condenser, which is excellent for all cotton shoddy or wool.

Beginning at the first breaker we will assume that we have a garnett breast, which is very desirable for wool shoddy or cotton. There should also be an 18-inch burr cylinder, 3 workers, 3 strippers, a lickerin, one breast roll, 2 metallic feed rolls and a small stripper to keep the bottom feed roll clear. The breast should be set with a 52 gauge. The first breaker on this card has a 10-inch tumbler, six 7-inch workers, six 3-inch strippers, a 10-inch fancy, a 24-inch doffer with a noiseless doffer comb. The first breaker should be clothed with No. 33 wire. The Bates feed on the second breaker has metallic feed rolls, which should set in each other about 1/32 of an inch to prevent the stock from pulling through in the middle of the feed, causing coarse and lumpy yarn. This card is provided with positively driven fluted distributing rolls, kept together by means of a weight so arranged that they will adjust themselves to all sizes of drawing. These rolls lay the drawing on the feed without any strain and so do away with the necessity of a latch at the side. The feed also has side plates instead of spike straps which are apt to break and run into the card, spoiling the feed rolls.

The tumbler of the second breaker is 16-inch clothed with No. 28 double convex wire. The second breaker has six 7-inch workers, six 3-inch strippers, one 10-inch

fancy, a 28 or 30-inch doffer as desired. This card should be covered with No. 34 wire and be set with a 26 gauge. The tumbler on the Bates feed should be about 16 inches, with No. 28 double convex wire, 5 workers, 5 strippers, and 14-inch ring doffer. This card should be clothed with a No. 35 wire and set with 28 gauge. The fancy is 10-inch and should be clothed with No. 32 open set wire for finisher; the second breaker fancy 10-inch, No. 30 wire, first breaker fancy about No. 28 open set.

When the cards are set in this manner and properly ground they should produce first-class work. The production for a 48-inch set of cards on 1 run work would be about 500 pounds for 10 hours; for 2 run work about 400 pounds, and for 3 run work about 300 to 350 pounds. A 48-inch card would supply 384 mule spindles; allowing 24 ends to a spool would require 16 spools for each mule.

I think this arrangement would give better results than a larger set as it will draw more evenly than the larger one.

The necessary help to run a 5-set card room would be one man to put in the stock and look after the Bramwell feed, one boy for the alleys to keep the cards clean and sweep the floor, a second hand who could help strip and one card stripper, and one overseer. The number of spindles per operative for a 5-set room on wool, cotton and shoddy on half draft would be about 8 mules of 384 spindles, but on full draft 5 mules would be enough of 384 spindles each. Most of this kind of work is done on full draft, which is 72 inches to the draw of the mule.

Bennett.

Running the second breaker and the finisher coupled together is now being adopted in nearly every mill, not altogether on account of economy, but because it gives a smoother and better roving. I was one of the first carders in this country to couple the cards in this manner and have run them both ways on all kinds of stock used in a woolen mill. I have found that when the cards are coupled together the roving spins better and the yarn gives better satisfaction in the weave room; it is also better for knitting purposes.

It has been demonstrated thousands of times that it is impossible on all kinds of stock to feed from a creel or an Apperly feed direct to a single cylinder finisher and get good results. It is not reasonable to suppose that drawing made from all kinds of stock can be fed on one side of a cylinder and come out perfect on the other. The Bramwell and Apperly feeds have been improved so much since they first came out that if they are properly cared for there will be no uneven work.

A set of cards as described should produce on a mixture of wool shoddy and cotton in 10 hours on 1 run work, the ring doffers running 30 r. p. m., 650 pounds of roving; on 2 run work and the same stock, 425 pounds; on 3 run work, 250 pounds, giving a three-fourths draft to the spinner. One carder, 1 second hand, 1 stripper and two boys would be sufficient to take care of a room of 5 sets of cards of this description. Five sets of 48-inch cards on this stock should be able to supply 1,440 spindles or 288 spindles per card, 5 mules of 288 spindles each and one spinner per mule.

Webster.

CORNSTARCH.

Editor Textile World Record:

In reference to the cornstarch question I would say that we are conducting a series of experiments on this subject both in our laboratory and in actual work. In the main I think the writer in the September issue is right. I have yet to see the finish that cannot be imitated with the use of cornstarch in place of any other variety. I am not in a position at the present moment to verify or criticise the figures given, but at some future time I shall be pleased to take up the matter.

The average "practical" finisher knows very little about the business. He has a few tricks which he has seen some one else do, but when it comes to originality the direction of his work usually tends toward fancy concoctions and multiplicity of ingredients with fancy names. Cornstarch will usually do the work if properly used. Acropolis.

SHEARS AND OTHER FINISHING MACHINERY.

BY H. B. FRASER.

From many finishers the shear gets the credit of being the most important part of the finishing machinery and enough has been said about the skill and experience required for its successful operation to scare a man from assuming the full charge of a finishing room. I have no wish to bring a nest of hornets about my ears, but I fail to see where all this exceptional ability is required. I am speaking from experience when I say this. I had a fairly good experience in the wet finishing department and was anxious to get control of a finishing room from loom to case, but this fear of the shear held me back until a friend of mine, the superintendent of a four set mill, asked me to take charge of the wet and dry finishing in his mill, at the same time saying he was having trouble with the wet end. I accepted the position, which three finishers had resigned from in the same number of months, and was lucky enough to find the trouble and to remedy it. My next thought was of the shear and how I was to grind and set it when it became necessary. I had seen a catalogue of Parks & Woolson's machines and in it was an article on the care of the shear. I sent for a copy and after reading the instructions a few times I ground the shear with perfect success. I might not have had so good success the first time if the shear had not been perfectly true to begin with, the only trouble being that it was dull. This showed that the men who had been there ahead of me understood the care of shears well. Since then I have had as many as six double cylinder shears under my care and did my own grinding.

Careful adjustment is the first requisite. First set the rest perfectly level; next set the ledger blade to the rest, either at the same height as the rest or a trifle below or above it, according to the finish required, then set the revolver boxes perfectly level with each other. This is done by bringing the centre of the boxes to the same height as the edge of the ledger blade, or a little below the edge. Before grinding see that the ledger blade is perfectly straight in front or on the face of the blade, also on the back of the blade; of course this is done with the revolver out. If the blade is sprung, draw it up by the back upper screws at the places sprung out from the revolver until the blade is true, then draw up a trifle more all the way along the upper back screws. This will bring the blade still tighter against the revolver. Now try the straight edge on the face and back of the blade to be sure that it is still straight. This is done by placing the straight edge against the face of the ledger blade near the edge, and with tissue paper, say five strips placed at regular intervals between, see if the straight edge pinches them all alike. If it does then mark with chalk or pencil one corner of the screws that bind the revolver boxes to the frame or carriage, also mark the frame at the same point on both sides of the shear. Now let off on the binder screws 1/2 squares, then lift in the revolver, and with the carriage thrown up and the belt running so as to turn the revolver backward the grinding is ready to begin. As the operation proceeds keep drawing up on the box binder screw on each side. The operator can tell whether he is drawing up evenly on the screws by judging the distance from the mark on the corner of the screws to the mark on the frame. When he has ground and drawn up on the screws until the two marks are exactly together again, and the revolver is running lightly and without noise, the shear is ground.

My reasons for recommending that the grinding be done by drawing up on the box screws are, first, there will be only two screws to handle, whereas if done by drawing up on the ledger blade screws there would be five screws to work; either one of which being drawn up the least bit more than the others will throw the blade and perhaps the revolver out of true. The second reason is that by marking the screws and the frame gives a still better guide, as the marks are before the eyes all the time. This cannot be done on the back screws on account of the emery and oil, which would obliterate the marks. The raising and laying brushes must both be set so as to touch the cloth evenly or trouble will result.

In a recent article on shears the corre-

spondent said it is easier to locate a trouble on any other machine than this, but it seems to me if a shear is cutting unevenly it can be easily located because the defect will always show about the same place on the cloth, whereas if there is trouble with a fulling mill or a washer the imperfection will be liable to be anywhere in the cloth on account of the goods being all roped up in these two machines. Furthermore in the fulling and scouring there are many other things to contend with. Suppose a kersey with a good percentage of shoddy is being finished. The goods come up to width in the fulling in a reasonable time and the finish is all right, all at once they begin to full hard and will not come to the required width. The superintendent is informed of the trouble and he holds up his hands and says everything in this lot is exactly like the lot that was finished before and the finisher must get them right.

Again the goods may come up to width all right but they smell greasy. Now if the truth were known the stock may have been reduced, or a new kind of oil may have been used in the mixing room. The finisher is seldom notified of changes made in the stock before it reaches him and so it is sprung on him as a surprise. Again in kerseys there may be a slight imperfection, a mere scratch or mark, which shows up only after the goods have been dried. Suppose the goods are being carbonized; here they are fulled, scoured, carbonized, neutralized, hot rolled, then taken off and gigged, cropped and dyed. After that they are either put in the washer to have the surplus dye removed, or are sent to the wet gig or the wet brush, then to the steamer, and the surplus dye is removed by alternate applications of hot and cold water. I prefer to blow out the dye on the steamer. I am convinced this is the best way if for no other reason than that it saves the trouble of putting the goods in the washer, taking them out again and folding them over, thus making less handling.

In the case of an imperfection in any of these processes I think a man's mechanical skill would avail him little. What is needed here are years of practical experience and good sound judgment. An imperfection of this kind cannot be fixed by the use of a square or straight edge, and in my opinion a man who is capable of grappling successfully with such difficulties as these would not be likely to get badly tangled in the mechanism of a shear. Besides he must possess a certain mechanical knowledge to take care of the wet finishing end of the department. Take a double cylinder teasel gig for instance; besides having the slats set even, the set-ups require a careful adjustment, for if they are out of true the goods will be gigged unevenly; the shear tender will not be able to shear them down right in the ordinary way, but by putting paper on the rest under the high side he may be able to get the nap even, but when this is done it will be found that the goods are shaded from side to centre. The goods should be returned to the gig to be evened up. It requires some genius to gig one side without spoiling the other, but there are tricks in all trades and also in ours.

In another mill making all wool cassimeres and overcoatings the overcoatings came to the perch uneven and were sent back to the shear to be sheared evenly. On account of this trouble finishers were coming and going every other week; the superintendent and the owner both told me as soon as I got there to fix the shear immediately as they were getting nothing but seconds from it. I looked the shear over and found it in good condition. I next changed the soap a little and the treatment in the mills and the goods came out all right. The trouble was uneven felting and this was the mill's first season on that class of goods. The fuller had been there twelve years and I had to full a few sets myself to convince him that I was right. I went there in March, the fifth man they had had since January. I stayed there six months and finished up every yard of overcoating they had and left them on an easily finished class of goods. Now if it is easier to find a trouble on any other machine than the shear, why didn't some of these men find it out and remedy it?

Nearly seven million pounds of bleached linen yarn were imported into Italy in 1905 to be used in the manufacture of laces.

REED MARKS.

Editor Textile World Record:

Enclosed is a sample of our finished ginghams, which is reed marked? These goods are made with a 50s warp and 56s filling. Can these marks be prevented? Is there any way to take them out in the finishing process? Daniels (935).

The sample of gingham sent me is very badly marked. So many things might cause it that it is difficult to say which one is responsible in this particular case. The whip roll may be too low; the breast beam may need a strip of wood to make it higher; the harness cams may not be set on proper time. I would suggest that the whip roll be raised and that a strip of wood be placed on the breast beam, say about 1/4 of an inch thick and about 1 inch wide. This will help to put a better face on the cloth, giving the yarn a chance to spread. If this does not give the desired result then set the cams so the harness will change about 1 1/2 inches from the fell of the cloth. Do not weave too loose nor too tight. The overseer and second hands should be on the constant lookout.

I have had twenty-two years' experience on this class of goods and think if these suggestions are followed the cloth will come out all right, although as I said before, so many things might cause the trouble that it would be impossible to give a definite opinion without seeing the looms in operation.

Gamaliel Gaunt.

It is difficult to prevent reed marks in plain cloth. The finer the reed, the more difficult it is to prevent them; in some cases it is impossible. This is due to the fine wire used in the reed, and to the warp not yielding readily to the finer filling when the reed is beating up. The wires of the reed swing more or less anyway.

These marks are caused when the reed beats up and the more one thinks of it the more surprising it is that they can be prevented. In the sample enclosed there are two ends in one dent; that is, each two ends are separated by a piece of wire.

The shape of the cam has a great deal to do with preventing reed marks and making a better appearing cloth. To prevent reed marks the shed should be open with the whip roll fixed on a higher plane than the center of the shed when the reed beats up. When the harnesses are set in this manner the bottom shed is tighter than the top shed; this causes the warp threads to force the filling equally between the threads, and it is only by getting the filling equally between these single threads that a full cloth can be made, unless one thread is placed in one dent.

I do not think it possible to take out reed marks in such fine cloth as this in the finishing process. The fibers will not swell and blend with the next thread, as does wool. Mangling might overcome this defect, as this tends to spread the yarn and give the cloth a softer finish. Jean Paul.

I have found the chief cause of reed marks to be in the whip roll being too low. Another cause is having the harness level with the lay of the loom and too far away from the fell of the cloth. On light work like the sample sent I should have the lay brought up to within an inch of the cloth, and would put a rod from 1/2 to 3/4 of an inch thick on the edge of the breast beam so as to throw up the cloth at this point. I would also raise the whip roll so the yarn will slant downward to the eye of the heddle, and rise slightly from the fell of the cloth to the edge of the breast beam. If the loom is set in this manner it will cover up the reed marks. I do not know of anything that will take them out after the cloth is woven.

Jack Ready.

I have worked in a good many different mills and run up against as many different reed marks as any one. In 99 times out of every 100 I have found the loom to be the cause of the trouble.

A few years ago a commission house sent back a piece of cloth to the mill where I was fixing looms and told the superintendent if he could not make cloth without reed marks they would not handle any more of his product. The mill was running on shirtings and colored dress goods, plain weave, 2, 3 and 4 harness work, 60s warp and 55s filling. An order had gone out from the office that the whip rolls were to be set one inch off the beam so when any one looked down the

room everything would be clean and neat. That was all right, but they did not get the first loom set right and that knocked the other 700 off and caused most of the reed marks. We knew what was being done, but we simply kept up our sections and when the cloth came out worse than usual with reed marks we would put on another reed and sometimes squared up the shuttle. I saw some men doing this who, I suppose, had been fixing looms before I was born. Things ran along this way for a while and then one day the overseer called all the fixers into his office. The superintendent was in that little office too. We all knew what was coming and the expression on his face I have never forgotten. As the last man came in wiping the perspiration off his face with a piece of cop waste, the superintendent opened out a piece of cloth and laid it on a blackboard. It was filled with reed marks. "We have had kicking enough about these reed marks," he said, "to have stopped it long ago. We have spent hundreds of dollars on reeds and we have got the best in the market. I have called you in today to find out what is wrong in the weave room. I have been putting it up to the finisher, but he says it is in the weave room. Now if any of you can solve the problem, out with it, now or never."

We all looked at each other, but nobody would speak. Finally the overseer said: "Boys, if you have got anything to say don't be afraid." That helped a little, but still nobody spoke. After waiting a few minutes longer the superintendent said, "I haven't heard anyone say anything yet." We all looked at each other again and after awhile I opened up by saying that the last mill I was in had to put a cover on the cloth, but that they didn't seem to care anything about it in this mill. By the time the superintendent asked me what cover had to do with reed marks, I began to get a little more courage and told him I thought it did have something to do with it. Then he asked me why I didn't put a cover on my cloth and I told him if I did I should have to break the rules by raising the whip rolls and moving the harness cams from the bottom center to very near the front center. I told him this would not only help to prevent the reed marks, but also the filling marks made when the weavers started up the looms after they had been stopped for a while. The superintendent told the overseer to take me to the loom that the piece of cloth came from and let me turn it upside down if I wanted to and they would look for the results.

The overseer and I went to the loom and we began by straightening out the reed, then we set the whip roll about 2 inches above the level of the lay, and when we got the harness shade set with very little tension on the up shade, we leveled the harness and moved the lay half way from the cloth. We took off the backs of the shuttle boxes and squared them up; we also squared the shuttles and filed off the shoulder so they would not interfere with the reed if the picking stick should throw the shuttles against it. When the work was done and the loom ready to start my heart was thumping like a trip hammer, but the loom was all right and from the appearance of the cloth made on it any one would have thought it was a new style of loom.

At the end of the week, nothing having been said to me in the meantime, the cloth was taken from the loom, inspected and finished and found to be free from reed marks. Then the rest of the looms were set in the same way and a few days ago when I called around to see my old bench mates they told me they didn't have to set the whip rolls in any particular place now and they have had no more trouble with reed marks.

The sample of cloth sent me has very little cover and a cloth without cover is especially liable to be reed marked. If these goods are woven on four shafts of harness and drawn in 4-2-3-1 straight draw, the lease rods in the skip shaft, and the looms run with a high whip roll, a lot of the trouble can be overcome if the reeds are not sprained and bent. The finisher cannot take out reed marks unless he can shrink the cloth in width and even then the results would not be good. Many a good finisher has lost his job through reed marks for which he was not to blame. Profile.

We are making some of the finest goods

in the country and never have any trouble with reed marks. When I am to make a piece of cloth of fine yarn I always have the reed fine enough to draw only one in a dent. This avoids the necessity of the ends passing each other in the reeds and spreading them. I set the harness cams so the reed is up to the cloth when the harness is even and just changing; this takes the strain off the reed and helps to cover up any appearance of reed marks. Quincy.

These marks result from various causes, the principal one being the use of an uneven or wornout reed. The best reed may be spoiled by tightening it at the bottom when it is placed in the loom; this causes the top of the reed to spring out of line with the reed cap. In such a case the reed has to be forced forward to get the cap on, which causes the dents to bind. If for any reason the dents are sprung out of their natural position reed marks in the cloth are the result.

Again they may be caused by the shuttle not being thrown true, which brings the heel of the shuttle in contact with the reed, thus damaging the wire. A weaver may injure the reed by the careless use of the reed hook; pressing the reed cap down too tight is almost sure to cause reed marks.

Another cause of reed marks is the use of a reed in which the wire is too heavy for the fabric, although the reed itself may give the required dents per inch; in other words, the steel used in the construction of the reed may be too heavy.

A hard twisted warp, particularly one combined with a heavy size, will show distinctly every dent in the reed throughout the cloth, though the reed may be perfect.

These are some of the causes of reed marks. The remedy is found in greater care. Care should be taken in the selection of the reed, and in handling it before it gets to the loom. When it is in position the greatest care should be taken by both fixer and weaver that the result may be perfect cloth.

Parker.

Reed marks may be caused by unequal shedding of the harness, the whip roll being too low, the lease rods too near the harnesses, cams treading too late, or the harness cams not having the right dwell. To get the best results I would suggest using half dwell cams, as this gives ample time for the shuttle to pass through the shed, and the change of the harnesses is not so sudden as to strain the yarn. The cloth can also be woven with one side softer than the other, by reason of the filling being more prominent on that side, producing what is known as the cover. The harness cams should be set so that the harnesses are level when the cranks of the top shaft are near the bottom center. The warp should be drawn on 4 harnesses, beginning at the front 1-3-2-4. After the drawing is completed and the warp put in the loom, make a lease with two ends under a rod. This can be done by raising the second and fourth harnesses, placing the largest lease rod through the yarn, lowering the second and fourth raising the first and third, and placing the smallest rod through the yarn. They should be set about 6 inches from the harness and the whip roll raised 3 or 4 inches higher than the race board on the lay. In an open weave, like the sample enclosed, the best results can be obtained by drawing the warp yarn through the reed, one thread in a dent. I do not know of any way to take out these marks in the finishing process. Alpha.

In some cases reed marks can be taken out in the finishing if a coarse reed is used. After the goods have been wet and stretched the ends will sometimes slide over and separate, but in the case of the sample submitted I think the reed is a little too fine for this. A mock leno with three ends in a dent will sometimes split the ends if the pattern cannot be divided into three, in which case the third end can be brought together in the finishing. The sample enclosed is drawn on four harness and by skip shafting the warp yarn it has a tendency to separate. In most cases of trouble with reed marks we use twice as many dents.

The style of the loom also has a good deal to do with reed marks. The English looms give more cover than American looms and the majority of American loom fixers run the

reed too close to the cloth, whereas if they would put the crank on the bottom center when the harness is level and a little past the top back center they would get a better cover. Foster.

For weaving goods of this kind I should set the looms with the tops of the harness even, the reed 2 1/4 to 2 3/4 inches from the cloth, with the rods as far from the harness as the harness is from the cloth. When the crank is on the bottom center the race plate should be 2 1/2 to 3 inches below the breast board and whip roll. Care must be taken that there is not too much tension on the yarn. Linden.

ROOM FOR IMPROVEMENT.

BY WHALER.

Let us consider the production of cotton cloth from a point of view seldom taken. Let us take a print cloth mill of 1,000 looms with spinning machines and everything else necessary for the production of print cloth, and assume that it requires 250 h. p. to run the mill. Each horse power consumes 2 pounds of coal per hour, which means 500 pounds of coal per hour for the whole mill. If the looms run continuously at 200 picks per minute we should then have 12,000,000 picks per hour at a consumption of 500 pounds of coal. In other words, 10 1/2 yards of 64 by 64 print cloth would be produced by each pound of coal consumed.

To the careful observer it will be evident that a very large amount of power is consumed in giving motion to various parts of machinery used in the manufacture of cloth. For instance, it requires a large amount of power to drive the shuttle across the loom to lay an insignificant thread of filling. I have no data on which to base my conclusions, but from my own observations I should say that a weight of two pounds falling through a space of one foot will give sufficient power to make one pick of cloth from raw cotton. On this basis I figure out that as there are 14,000 thermal units in one pound of coal, and in one of these units there is enough power for 386 picks, there are 772 foot pounds in one unit, which divided by 2 gives 386. This multiplied by 14,000, the number of units in one pound of coal, is equal to 5,404,000 picks, or 2,345 yards of print cloth. Compare this with the actual production of one pound of coal now, which is 10 1/2 yards, and we see what a vast field there is for improvement.

THE ECONOMICS OF COAL CONSUMPTION.

BY E. G. BAILEY,
Chief of Coal Department, Arthur D. Little's Laboratory.

In order to obtain true economy in the consumption of coal, the efficiency of the boiler plant alone should not be considered, but the selection of the kind of coal is of as much importance in saving dollars and cents, if not more so, than in determining the best facilities for burning and careful instructions of the firemen.

In selecting coals for use in New England states we have to consider only coals coming from the northern Appalachian fields. The coal measures in this field vary from 2,000 to 5,000 feet in thickness and there are mines in different parts of it working in about 25 different seams. The character of the coal is different in different districts, varying from anthracite to gas and cannel coal, and each person must be a judge of what character of coal is more suitable for his purpose. After this has been determined, he should next consider the quality. In the case of coal a certain amount of preparation at the mines may improve the quality an appreciable amount, but this is limited, depending upon the nature of impurities found in different seams and different districts. The impurities consist of:

1st. Bone, slate or shale partings, some of which may be thick and strong enough to be removed, while other seams have characteristic "knife blade slates" which must be shipped with the coal. This is especially true in many of the Pennsylvania semi-bituminous coals.

2d. Slate from the floor or roof, the amount of which shipped with the coal depends upon the nature of the material, the thickness of the seam of coal and the method of mining.

3d. Many impurities have been brought into a seam of coal by the action of water where the mineral compounds are crystallized and appear in the form of sulphur balls and calcite; the former are oftentimes concealed in the centre of a lump, making it impossible to clean it at the mines.

The different percentages of these impurities as they occur in coal with the varying ease with which they may be eliminated are largely responsible for the quality of coal from different mines and different districts. Heretofore mines have been opened where natural conditions made it possible to produce coal at a low cost and little attention has been paid to the quality of the coal that can be actually loaded. However, the mines now being opened have been tested by means of a diamond drill and chemical analysis which results largely determine whether the coal will find a ready market.

In the case of the mines already opened the object of the operator is

1st. To produce coal as cheaply as possible.

2d. To obtain a large percentage of recovery.

3d. To have coal free from impurities.

The part of the sales department or seling agents is to sell as much coal as possible at a good price.

It remains for the consumer to choose his own coal, in the selection of which he must consider the character of coal desired and the quality of coal available, as well as the price and possibilities of satisfactory deliveries. In regard to the quality it is the general opinion that Pocahontas, New River and Georges Creek coals are the best that enter the New England market. Many people firmly believe that it is economy to buy the best; others have certain conditions or limitations in their boiler plant which compel them to disregard inferior grades of coal, so that both of these classes specify one of these three kinds of coal.

The following figures will show the amount of these coals available, as well as the tonnage consumed in the New England states.

1906—Gross Tons.

District.	Mined.	Loaded at Tide Water.
Georges Creek	4,400,000	1,200,000
New River	4,800,000	2,300,000
Pocahontas	6,700,000	2,000,000
Total	15,900,000	5,500,000

The New England ports received in 1906:

Maine	2.067,000	tons
New Hampshire	377,418	tons
Boston	5,866,136	tons
Massachusetts	7,115,136	tons
Rhode Island	1,962,579	tons
Connecticut	2,525,000	tons
Total	14,047,133	tons
All Rail	6,000,000	tons
Grand Total	20,000,000	tons

From these figures we note that New England cannot receive more than 25 per cent. of its annual consumption from the Pocahontas, New River and Georges Creek districts combined. The remaining tonnage of bituminous coal must come from Pennsylvania and the northern part of West Virgina. Due to the variations in the quality of coal coming from these latter districts, as well as the fact that some unscrupulous dealers make substitutions, it remains for the consumer to determine for himself the kind and quality of coal he receives from time to time. He may do this by

1st. Examining bills of lading, which is not a conclusive evidence of the kind of coal and much less the quality. To be sure, Pennsylvania coal cannot be loaded at Newport News or Norfolk, but Kanawha and Thacker coals may be. Also Georges Creek may be loaded at Baltimore, Philadelphia or New York.

2d. Physical inspection. In order to determine from what region the coal comes a person must be quite familiar with all the peculiarities of all the different coals, and he can detect only large variations in the quality.

3d. Ash or evaporative tests in the boiler plant. These, however, are so greatly

affected by the conditions and methods of firing that such results are only approximate and are of little value in making adjustments with a coal company, and it is seldom that results can be traced to specific shipments, especially in all rail deliveries; also, the results are generally obtained long after the coal has been discharged.

4th. Chemical analysis is the only method whereby definite conclusions may be reached in subsequent controversies.

The question now arises as to how by any of these methods, and especially the latter, the consumer is going to derive the benefit. Even though the contract does not state any specified analysis or B. t. u. the record of such results is an incentive for him to supply a good grade of coal. What a coal consumer really wants when buying coal is the maximum number of B. t. u. per dollar, and should be paid for on this basis, the same as is the case in buying ore, the price of which is determined by the per cent. of metal contained therein. This method of buying coal has been tried in a great many cases, some having met with success and others with failure. The attitude of the coal man has been against this basis in a great many cases, and where he has been compelled to bid on such propositions he has placed his price sufficiently high to protect him from any deductions which may be made from the contract price. The reasons for this are generally due to the coal specified being much better than anyone can actually supply; the specifications making deductions out of proportion to the quality of the coal; or that the sampling is done in a careless and unreliable manner. Much could be said concerning each of these three reasons, but it can all be summed up in stating that the consumer has tried to get something for nothing and has not considered that the coal man must receive a fair profit from all the coal which he handles. There is no doubt that this basis of buying coal will come into general use in many of the larger plants as soon as it is established on a fair method of making deductions or paying premiums as well as taking samples of the coal received.

Now that the coal has been bought and delivered to the plant it remains for the consumer to handle the coal economically from the cars or vessel to his boiler. The cost of doing this varies from 20 to 75 cents per ton in different plants. A purchasing agent would be very obstinate before paying 55 cents per ton more than is being paid by his neighbor, yet he is willing to allow this difference in cost to take place in the plant.

The economy obtained in burning the coal is dependent upon the boilers and accessories as well as the cleanliness and repairs of each and to a greater extent upon the method of firing. This is a subject in itself and will only be mentioned as needing constant supervision in the boiler plant as to systematic methods and flue gas analysis.

A SILK WEAVING MILL.

The accompanying plans for a silk weaving mill have been prepared for Baumann-Streuli & Co., Rheinfelden, Switzerland. The weave room consists of a rectangular shed next to which are annexed a series of offices and work rooms. The entrance is through the hall, A, and the room, B, which adjoins the dining room, C, the latter being also used for a wardrobe. The watchman's room is at B'. From the room, C, the weave room, K, is reached by passing through the room, B, and hall, A. Adjoining the weave room are the tool room, D, the repair shop, E, and the office, E', the the latter having a door leading to the yard. Next to the power house, F, is the boiler house, G. The power is conveyed to the different lines of shafting through the beltway, L. Between the beltway and the boiler house is the chimney. The room, H, is used for storage. In the room adjacent is located the heater, o, from which the hot air conduit, p, leads to the mill. Back of the weave room is the toilet room, M.

The main mill is divided by a glass partition into two parts, I and K. The room, K, will accommodate 154 looms, only 140 being shown in the plan. An extra row of 14 can be placed at the right. The looms are arranged in 10 rows of 14 looms each. The looms in rows 1, 2, 3, 5, 7, 9, 11, 13 and 14 are 30 to 40 inches wide; the other looms are for narrower goods, 20 to 24 inches.

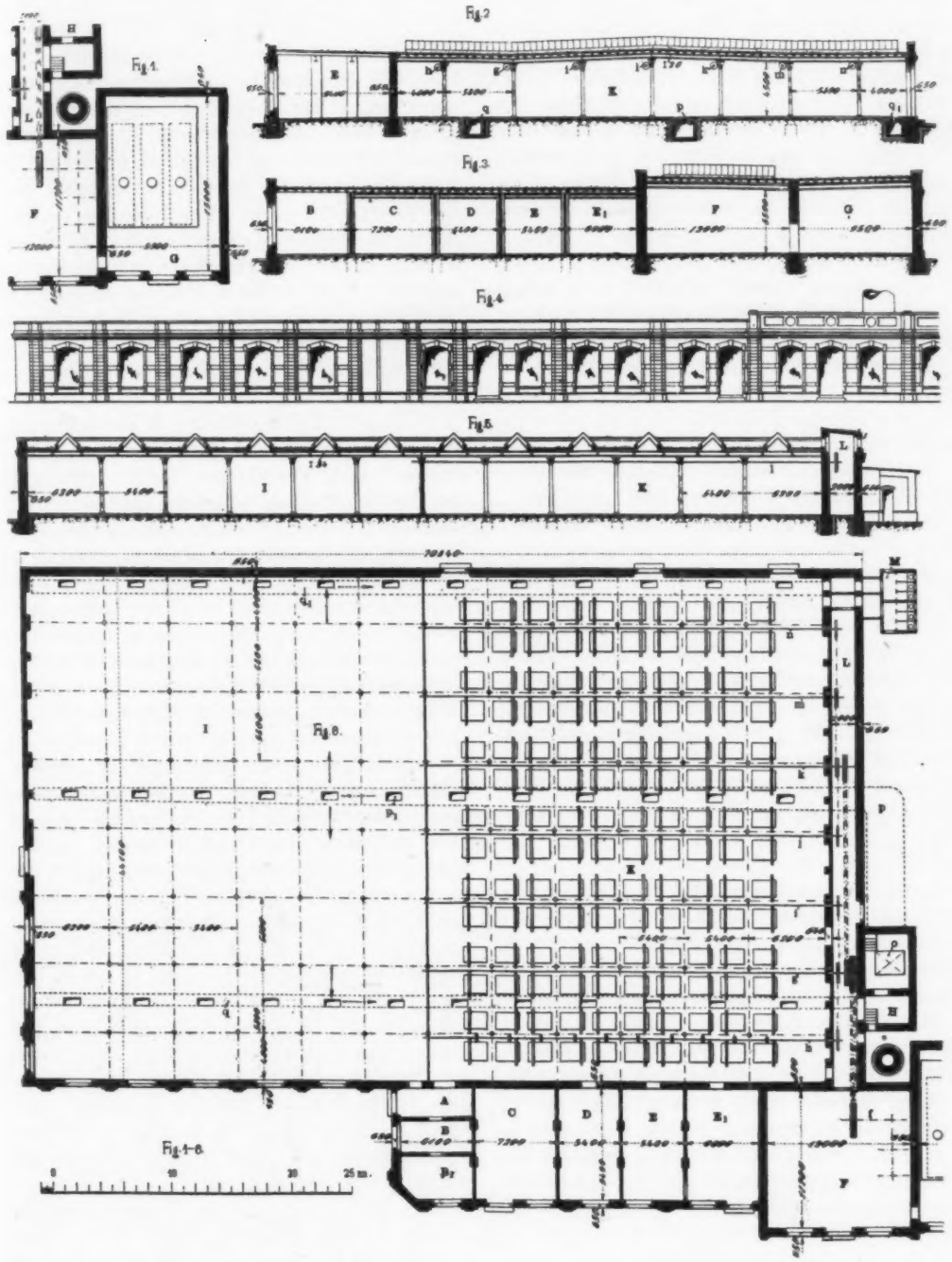


Fig.1
Fig.2
Fig.3
Fig.4
Fig.5
Fig.6
Fig.1-6.
0
10
20
25 m.

The space between posts are 17 feet 9 inches by 19 feet, which gives ample room for the looms. The ordinary depth of a silk loom is 6 feet 5 inches; two looms occupy 12 feet 10 inches. With a space of 1 foot 8 inches between the two warp beams there remains a width of 3 feet 3 inches for the weaver. The length of the bay, 19 feet, allows space for wide alleys which average 4 feet in width. This facilitates the transportation of material and lessens the chances of accident.

The large room, I, is used for the preparatory processes. In it are found the winding, spooling, warping and beaming machines; it is also used for cloth inspection, shipping, etc. This room is also large enough to accommodate the offices if necessary, in which case the rooms, E and E′, can be used for repair shops.

The style of the roof covering the main mill is shown in the cross sections, Figs. 2 and 5. By this arrangement there is plenty of light for every loom. The windows in the roof are arranged on hinges to facilitate ventilation and cleaning the glass. The front and one end of the main mill are provided with windows which admit light and air from the side. The front view is shown at Fig. 4. For ventilating, the fresh air is first heated and humidified and then forced by a fan through the pipe, p, entering the room through gratings in the floor. The air escapes from the mill through two conduits, g, g′, in the front and back of the mill.

In the power house, F, is a 100 h. p. engine driving the machinery and dynamos. From the 4-groove fly wheel the power is transmitted by four 2-inch ropes through the beltway to the main shaft, G, from which it is in turn distributed by three 1 3/4-inch ropes to the various counter shafts as shown in the plan. The driving pulleys have an average diameter of 60 inches; each counter shaft drives 22 looms requiring from 5 to 6 h. p. This small load makes it possible to increase the capacity of the mill without change in the method of driving the shafting.—Uhland's Technische Rundshau.

There are six spinning and weaving factories in the State of Santa Catharina, Brazil.

ENGLISH NOTES.

By Our Special Correspondent.

The business the Special Commission has come to Europe to investigate demands a word here. Mr. Reynolds and his commissioners will find, if they arrive at the truth about English textiles, that discrepancies between prices for home consumption and for export do exist. Very usually makers sell more cheaply to exporting than to home-trade houses. In a regular way woolens and worsteds at some five shillings a yard will be threepence cheaper to shippers. Upon goods at about a shilling a yard differences of a farthing or a halfpenny have been noted by this witness.

A margin of five per cent. is not abnormal and, of course, it has its explanation. The shipper's orders are larger, for his customers are chiefly wholesale dealers over-sea. His business is therefore more considerable than that of him whose customers are retailers at home. Often, too, the terms of credit to shippers are shorter and the charges incidental to securing the business less. The savings in freight on goods and in traveling expenses are offset somewhat by the exporter's extravagance in patterns. He is sharper than the house trader over claims for shortages and damages and delays. Withal he buys a little cheaper and for no other reason than that his orders can be executed more cheaply on the whole.

In the cotton trade home and export demands run more in separate grooves than in the woolen business. There is no sale at home for much that is exported and none abroad for many makers selling at home. In grey cloth off looms there is probably no distinction to be drawn between home and export prices other than such as clearly derive from quantities or market conditions. But in the case of some prints and dyed goods a slight difference in favor of the exporter asserts itself and for the reasons apparent in the woolen trade.

Stock and end-of-the-season goods are on another footing. Manufacturers of the finest worsted and woolens part with large parcels of cloth to dealers in whom they have confidence, on the clear understanding that the

lots are not to find their way into the home trade. These lots are turned over at reduced prices and are limited in quantity. They are shunted into side-tracks by makers of repute, who want to clear the way for next year's patterns and next year's prices.

Little direct foreign trade is done by manufacturers and it is not known that they habitually sell more cheaply abroad than at home. To trust a Plauen manufacturer, who had been wanting to buy cotton net in England, English makers are rather disgusting people to attempt direct business with. Their motto, he says, is "We don't trust damned foreigners." In that case they do no foreign business at all. But instances are known of makers who have gone to great pains to realize lower prices than were waiting nearer to their own doors.

* * *

A committee of wool-brokers and others proceed gradually with the effort to keep wool free from vegetable filaments. Improved bagging of various sorts has been inspected, but for the present there is no definite recommendation. There are some echoes of a squabble as to who shall pay—grower or user—for the better bags that are needed for Australasian produce. But this is not edifying. It must be well worth the while of both parties to see that colonial wool arrives in the best shape. There is a wool-baling as well as a cotton-baling question and it is right that both should meet with proper consideration from all parties.

* * *

The connection between walls and wool may not be immediately evident, although it is clear enough to the man who farms near a village or town. Not all stray dogs kill sheep, but most will chase them, and unless fences are good and high the sheep are driven into the clover, the corn or the next farmer's hay meadow. Fences are things that landlord and tenant and occupants of adjoining farms most frequently quarrel about. Neither party wants to keep the partition in sound order and rather than do so a small farmer will forego the sheep that would do his pastures good. Because of faulty fences quite as much as of mischievous dogs, there are fewer sheep in England than otherwise would be.

A suggestion by W. L. Black that with the extermination of wild animals in Texas would disappear the expense of shepherds' wages is not borne out in British experience. Where there is no fear of carnivores, sheep have to be inspected once every day. They are counted to see that none are missing, for once in a way an animal will be lost in a drain or water-hole. They are inspected narrowly for symptoms of disease. Wounds and sores want dressing and protecting from flies in summer, animals ill with inflammation need killing to save their carcass value, "water on the brain" needs tapping and such occurrences as snake-bites need early attention. In winter the flocks have to be saved from snow-drifts and fed from troughs and in lambing time shepherds have to be out day and night. The number of shepherds required varies with the size of the run as well as the size of the flock. On hill land in Scotland, where one sheep is kept to one acre, the whole time of one man and most of another's may be occupied all the year round with a flock of five or six hundred. The profit of sheep-keeping depends on the closeness and intelligence of the shepherding as much as on any factor. We get our shepherds cheap, but if their labor were dear it would be no less necessary.

* * *

Cork squeezing rolls are taking their trial in Yorkshire after an extended experience in Spain. Built of edgewise slabs of cork, clamped under pressure between iron ends these are fitted to cloth scouring machinery. To get the necessary weight in the upper roll a heavier metal case than is needed in wood rollers is inserted. The elasticity of the material appears to avoid wearing-down in the cloth-runs and the close grip of cork surfaces drives water from the cloth unusually well. On woolens the elastic grip has a gradual milling action and the desirability of cork is limited chiefly by consideration of price. Cork rolls cost twice as much as beech rolls and the tests aim at comparison in length of wear.

In cheap printed cotton cushion covers some popularity has been won by embossing in relief. The cloth is stiffened somewhat and the rose-buds, stalks and leaves of the print are raised enough to improve the perspective by means of pressure between die and counterdie. A richer effect is thus given to ordinary four color printing on an art-colored ground. The embossing would not seem to be permanent in wear.

* * *

Wool is not alone guilty of spreading anthrax. There are circumstances even in which the disease might come from machinery. An English ironworker's death shows how. He had come into collision with an iron projection which had been treated previously with animal fat and germs from that were inoculated in his system. The instance is a rare one and the grease might never have been suspected had the same been a woolen mill.

* * *

On the subject of textile schools the words of an English maker of ingenious testing apparatus of various sorts are interesting. "We are always anxious to sell to the schools. Get the appliance into the schools and orders come of themselves," he said. Instances were apt of how a visitor from Japan, another from America and others from other countries and distant parts of this one, had sent him orders after seeing his mechanism in use in textile colleges. Such business is additional to that which comes on the recommendation of students themselves. The novelty and ingenuity of the contrivance has obviously much to do with the commercial results, but the experience tells its own tale to inventors.

* * *

Trade unionism in England is more the enemy than the friend of technical education. With the object of limiting competition with themselves reactionary workmen frown on any scheme for teaching trades otherwise than by apprenticeship. Their attitude is clearly shown by a proposal the Bradford educational authority is asked to accept. It is proposed to instruct the Technical College staff to make a return showing the wages students get from their employers, the contracts held with employers and also whether the student has displaced any married man from his occupation. If so, the wages of the latter are to be ascertained.

The request is a commonplace of obstructionism. What is remarkable is that the college committee should have accepted a resolution in these terms. Opportunity is left for its rejection by the City Council, but the incident is not without a general significance. One of the effects of placing textile teaching under public control is to expose its welfare to the prejudices of a clique, which may be politically strong, but is not to be trusted in so important a matter. Textile teaching is now principally under the control of municipalities and the disadvantages as well as advantages of that domination are felt.

* * *

Factory dressmaking in England is palpably a growing industry. That the number of hands employed is four times as many as five years ago cannot be said; but such is the extraordinary increase reported in Canada by the census-takers of last year. Our factory dressmakers are very busy and their operations have an unquestionable interest for makers of dress-stuffs. The factories use less cloth per garment. They cut a skirt from 3 yards instead of the 4 or 4 1/2 yards consumed by amateurs and ordinary custom dressmakers. Thereby they can offer the garment made and finished at approximately the price a housewife would pay for what she calls a skirt length. Other influences of this development in dressmaking are to limit the numbers of styles which become popular and thus to make individual orders larger; and further to encourage the sale of cheap rather than good sorts.

At odd times computations have been made of the effect on a centre like Bradford of a fashionable freak to have wide skirts instead of scanty ones. Such changes are passing ones, but the present economization of material looks like becoming a permanent influence upon the volume of trade.

It is perhaps not impertinent to suggest to the Americans who supply mankind with counting-house files, indexes and accessories of system, that a new world for them to conquer is in the cloth pattern-room. The typical pattern-room in England is a waste of gum-pots and bundles and parcels and shelves, and only a man who was born amid them can find what he seeks. There should be use in all countries for elastic "library" arrangements adapted especially for patterns of cloth.

• • •

More Yorkshire combers, spinners and weavers of worsted have set up means of their own for calculating the co-efficient of moisture in their material. For the purpose a very cheap and simple apparatus used to suffice. This was a sheet iron cylinder three feet high and two in diameter with a cone-shaped cover, a tube to contain a thermometer, and a cage for the material. An atmospheric gas-burner in the bottom supplied heat and loss of weight was determined by weighing before and after cooking. The weakness of the appliance is that one can have no absolute certainty that bone-dryness has ever been reached during the experiment. It leaves something to guess, but the ovens are still employed by some people and are made by J. H. Heal & Co., Halifax (Eng.) at some $17 each.

Ovens of the type used in public conditioning-houses are preferred in general and, as made by the makers named, cost approximately $58 each. There are an inner and outer cylinder in these, with a space of an inch and a half or so between the walls. This forms a hot air flue for the Bunsen ring below and an outlet in it passes away the rising fumes. Another outlet in the flat lid of the inner cylinder is to pass away steam expelled from the material. A long thermometer arranged to allow of reading without displacement from its shield records the temperature. A pair of brass scales with an agate knife-edge are mounted on the oven-top, one arm with a small weight shelf serving as the support for the basket of material to be tested. From the outer arm hangs a weight-pan whose own weight is exactly counterpoised by the wire basket or wire reel on which the sample lot is placed or wound.

A pound of top or three to five pounds of cops are taken and balanced by weights. As drying begins weight is lost and the beam tips outwards. From time to time the balance is redressed by weights put upon the shelf of the goods-arm of the scales. The sum of weights required to restore equilibrium represents the weight of water expelled. And when an equilibrium has been gained, and when for a quarter of an hour no further movement of the beam is discernible, the stage of total dryness has been reached. The rest is a simple matter of calculation from printed tables.

With ovens of this kind, which stand about a yard high and measure 40 inches in diameter, there are supplied sets of weights ranging from 1/4 dram to a pound. They cost, according to materials employed, up to $70 and are made by Hall & Kay of Ashton-under-Lyne as well as by J. H. Heal. At the Bradford conditioning-house the number of ovens necessary for use has been very much reduced by introduction of a hot blast plant. The time occupied in making a test has been cut down two-thirds by forcing hot air through the oven. Ovens complete with weights and thermometers are being sold off at $45 each so long as the supply holds. Geo. Thomas & Co., 60 Deansgate, Manchester, supply foreign-made ovens differing in detail from those here described.

According to a report issued from Manchester by the International Federation of Textile Workers, the weekly wages of English operatives are: Weavers, $4.86; spinners, $9.72; card-room workers, males, $7.29, and females, $5.35; beamers, $7.29; bleachers, males, $8.76, and females, $4.37; and loom fixers, $10.20. In Holland the wages per week are given as follows: Spinners, $4.86 to $7.08; card-room workers, $3.12 to $4.37, and weavers, $2.40 to $4.05. In Denmark the average rates are: Spinners, $4.86, and weavers, $3.89 to $4.37. In Silesia men weavers make $2.28 and women $1.68 a week.

WEAVES FOR ELASTIC FABRICS.

(From Oesterreich's Wollen und Leinen Industrie.)

The analysis and drafting of weaves for elastic fabrics require much care and present special difficulties. Elastic garter fabrics are usually made not with one weave for the whole width, but in stripes requiring different weaves for the center and the sides. A knowledge of double weaves and the use of stuffing threads is necessary in designing this class of weaves. We will illustrate the method of dissecting an elastic weave by two examples, one of a garter fabric, the other of an elastic shoe fabric.

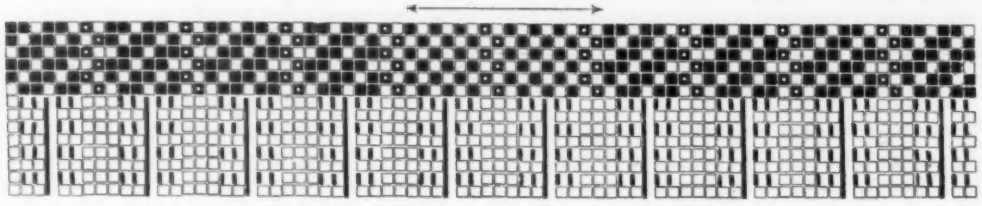


FIG. 1.

Double weaves are generally used for garter fabrics, the rubber being inserted as a stuffing thread. The back and face are stitched by special threads. The warp and filling are classified as follows: Face warp, face filling, back warp, back filling, stuffing warp, stitching warp. The face and back filling are of the same material.

Usually the face and back weaves can be determined by an examination with the naked eye or by the aid of a magnifying glass. If this is not possible the beginner can proceed as follows: The back warp and filling are first removed from a small sample; the rubber or stuffing warp, which is left free, is then removed. The face weave can be easily determined from the remaining face warp and filling. The face warp is then removed, leaving the back warp and filling and warp stitching threads, from which the remainder of the warp is found. In removing the various threads the order in which they are arranged in the cloth can be easily determined.

Fig. 1 shows the face weave for the entire width of the garter fabric. The central portion is reduced, as it consists of six repeats of the weave as shown. The black squares indicate the face warp above the face filling; the black squares having the white circle in the center indicate the binding warp threads above the face filling. Two binding threads come together, but one thread can be used in place of two if desired. The pattern as shown consists of 6 face threads and 2 binding threads. The position of the rubber or stuffing thread is indicated by the long lines below the weave. It is in the center of each group of face threads in both the center and the border of the elastic. The heavy broken lines below the draft indicate the back warp threads. For every 6 face threads in the warp there are 4 back threads; in the center of each group is the rubber thread.

The face warp and filling are now removed from another small sample of the same fabric. The rubber threads are then removed, leaving the back warp, filling and warp stitches from which the weave can be readily determined. The back warp is then removed and the interlacing of the stitching threads with the back filling is noted, this being always a plain weave.

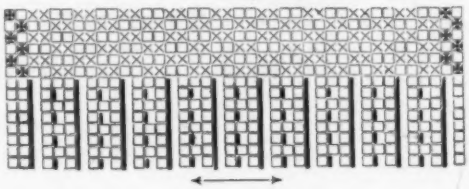


FIG. 2.

Fig. 2 shows the back weave, the plain weave intersection of the back warp with the stitcher being omitted. The weave as shown begins and ends with two plain weave threads, the body of the weave being the rib. The rubber thread is indicated by the continuous line, the stitching threads by the

broken line. By comparing Figs. 1 and 2 it is seen that for every 6 face threads and 2 binding threads there are 4 back threads in the center of which is placed the rubber thread.

ing the plain weave for the rubber threads must be indicated by a different mark, in this case by the squares with four upright lines. The rubber thread is lowered at every face pick and raised on all other picks, thus

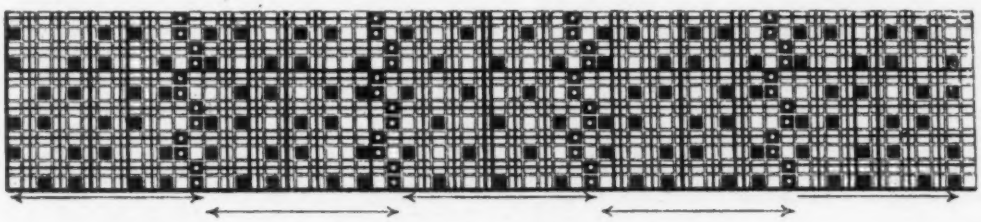


FIG. 3.

The rubber is sometimes twisted with a cotton thread to prevent it slipping in the fabric. The face and back weaves are now combined, preferably using different colors to indicate the different threads.

bringing it between the face and back of the fabric. The squares with the diagonal lines indicate the face warp threads above the back filling. Fig. 4 shows the complete weave with the rubber warp and the inter-

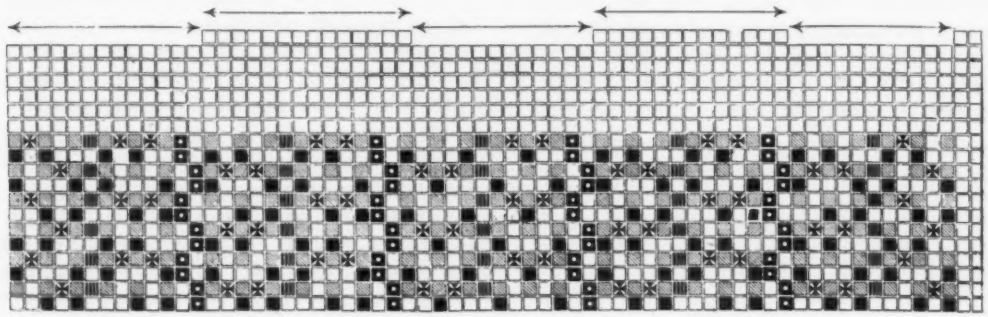


FIG. 4.

At Fig. 3 the black squares with the white center indicate the binding threads. The position of the back filling is shown by the fine cross lines. The back warp is indicated by the finer lines, the rubber warp by the

section of the warp stitchers. Ten harness and 12 filling bars are necessary for this weave, the goods being woven 1 face, 1 back, with one shuttle.

Elastic shoe fabrics are dissected in the

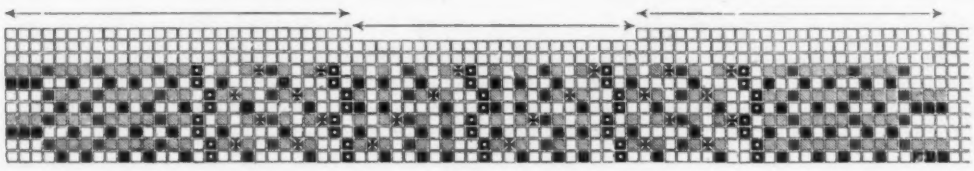


FIG. 5.

heavier lines. The back weave is then marked on the draft by the black squares with white crosses. As the rubber warp is below the face filling and above the back fill-

same manner. Fig. 5 shows a complete weave in which the intersections are indicated by the same marks as in Fig. 4. The face weave has 18 threads on each side,

woven with a 3-leaf twill. The body of the fabric is woven with a 4-leaf warp twill on the face and a 4-leaf filling twill on the back, the latter being a warp twill when the cloth is turned over. The three threads on each side are woven 3-ply. The face filling is heavier than the back filling. The back warp is in the body of the goods, but is left out of the border with the exception of 4 threads on each side of the central portion. The 8 back threads in the border are woven plain; those in the body of the fabric are woven with a twill. Leaving out the back warp causes the back filling to intersect the binding threads and the face warp. This with the 3-ply edge produces a close, round selvage in which are woven 3 rubber threads to give the necessary elasticity to the upper part of the shoe. A part of the face is drawn to the back in consequence of the elasticity of the back filling. The tight weave increases the durability of the edge. The filling is woven 1 face, 1 back. The warp, with the exception of the border is dressed as follows:

1 face
1 back
1 face
1 back
1 rubber
1 face
1 back
1 face
1 back
2 binder

11

One thread can be used in place of the two binders if desired. The use of two threads, however, gives a more solid fabric and ensures a better position for the rubber thread.

The weave at Fig. 5 requires 15 harness—1 for the rubber, 2 for the plain weave of the border, 4 for the face twill, 2 for the plain back, 4 for the back twill and 2 for the warp binders. There are 8 picks in the filling pattern.

Switzerland in 1906 exported to the United States laces to the value of 11 million dollars.

IMPORTANT RECOMMENDATIONS FOR THE EXTENSION OF THE POSTAL SERVICE.

The Federation of Trade Press Associations held its annual meeting in Washington last month and entertained as its guests, among others, Postmaster-General Meyer, Third Assistant Postmaster-General Lawshe, and Maj. John M. Carson, Chief of the Bureau of Manufactures. The address of the Postmaster-General was of interest not only to the publishers present, but to the general public and particularly to merchants and manufacturers, for some of his recommendations will, if carried out, extend materially the scope of the mail service while his recommendation of postal savings banks is expected to bring into general circulation a large amount of money now out of the channels of trade and thus make it available for purposes of commerce.

Postmaster-General Meyer said:

Mr. President and Gentlemen: I am delighted to have the honor of extending a cordial greeting and welcome to all you gentlemen here this evening and I am also pleased to be here to meet you, because I am aware of the great work which you are doing, not only in extending trade, but also in extending education, and I desire to take this opportunity to say to you that the policy of the Department toward your Association and its members is absolutely friendly.

The work that the Department is doing in the way of transporting and distributing second class mail matter is stupendous, but it is not a money-making concern, and I want to assure you, from the study which I have made of this subject and the object lessons which I have derived, that it will not be my policy to advocate any increase in rates.

I said to you that the Post-Office Department is not a money-making concern as that is clearly evident from the deficits, which you are all aware of, which have been shown for the last ten years. At the same time, we desire to make in return a dividend to our patrons by giving excellent service and by giving such satisfaction as is possible. There are many interesting problems which are coming up before the Department, some

of which I propose to recommend for Congress to act upon this year in my annual report. For instance, I propose advocating an increase in the weight, and a decrease in the rate for parcel post. The rate at present is sixteen cents a pound. I propose to recommend a reduction to twelve cents, or four cents a pound reduction. Why? Because that is the rate which is being charged to our people if they send a parcel out of this land to a foreign land and it does not seem right that we should charge four cents more a pound for parcels if we send them to our own people in this country.

It is for the same reason I desire to increase the limit of weight from four pounds to eleven, because that is the weight we allow today to twenty-two foreign countries with which we have convention, and it is only fair to adopt that rate, Congress having established that rate with foreigners, and give it to our own people. In addition to that, I can say that that weight limit, and greater ones, have been adopted by the most civilized countries in this world.

The rural delivery has been criticised by many people, and it is not fully understood. At least ten years ago the rural delivery was first started, and in the fiscal year 1897 fifteen thousand dollars was expended as an experiment in the rural delivery. The deficit that year was about eleven millions and a half. Ten years later, in the year 1907, the expenditures for rural delivery were nearly twenty-seven millions and the deficit as reckoned, we have it for three-quarters the final quarter is only estimated, is supposed to be seven millions. Think, gentlemen, what that means. During that period the rural delivery has increased from fifteen thousand to nearly twenty-seven millions and the deficit has decreased nearly four millions, showing conclusively that with its enormous expenditure, it has increased in the rates correspondingly, and we cannot measure in dollars and cents the benefit that is being brought to this country in the way of education and enlightenment.

Now, in connection with that rural delivery, I propose to advocate before Congress a parcel post emanating from the point of origin. In other words, a parcel post which will benefit the farmer and those people on that rural route and also the small storekeeper or retailer. That thought is not understood, but when it is I cannot help feeling that every Congressman who represents the rural district will feel obliged to support that in order to benefit the constituents who live in his district. Never before have we been able to take up parcel post in that connection, because when it was advocated parcel posts were not in existence, and I believe that with parcel post at five cents a pound and two cents for each additional pound, we will be able to make in time the rural delivery self-sustaining.

There is also in this country a great deal of hidden money—money that is hoarded, money that is carried in the pocket, money that is placed in the stocking and in places we know nothing about. I propose to advocate a postal savings bank. My object in doing that will be to get this stagnant money into circulation and lead it back to the mutual benefit of capital and labor, and in that way add to the general prosperity of the country. I advocate, when these deposits are made in the savings bank, of placing it in the national banks in the districts where the post-offices are located and in that way get it back into the use of the people. I have approached a number of bank presidents asking what rate of interest they would give for such deposits for savings banks, and they told me without exception I could count on two or two and a half per cent. Consequently I have intimated, and intend to advocate before Congress, a rate of two per cent. per annum on these deposits, or one per cent. semi-annually. That will show to the people of the savings banks that we are in no way competing with the savings banks of this country because they are paying three or four per cent. The money we want to get at is the money not now in use, or which is being hoarded, or by people kept so far from savings banks that they do not have the opportunity to place it in safe keeping.

We are also considering and have decided upon bringing to the Congress the proposition of issuing postal notes up to $2.50. These postal notes will be without advice in order to meet a demand that people may get

notes of small denomination which they can obtain from the post-office with the least possible delay and in a most feasible and acceptable manner.

We are also trying experiments in stamp-vending machines, in order to ascertain if they are practicable and will facilitate the people in obtaining the stamps and increasing the sale of stamps.

These are some of the most important things which I shall bring to the attention of Congress in my annual report. I count upon you, gentlemen, for bringing attention to these matters, if possible, in your journals, in order that the people may be thoroughly acquainted with the intention of the Post-Office Department and also that their representatives may act upon it at the next session of Congress in a most enlightened manner.

THE CHIEF OF THE BUREAU OF MANUFACTURES TELLS HOW HIS DEPARTMENT CAN BE OF DIRECT SERVICE TO MANUFACTURERS.

At the banquet of the Federation of Trade Press Associations held in Washington last month, Major John M. Carson, Chief of the Bureau of Manufactures, urged the trade press to assist the Department of Commerce and Labor in spreading knowledge of the work the department is doing and inform manufacturers that it was created for their benefit and to ask them to make use of it. We can perhaps do so in no better way than by publishing Major Carson's address in which he tells about the work of his Bureau and how it can be available to manufacturers.

ADDRESS OF MAJOR JOHN M. CARSON.

I feel especially gratified at the privilege of mingling with the membership of the Trade Press Association. I presume I may say that I am glad to be here, both as a representative of the department with which I am connected and as a publisher of a great trade paper, the "Daily Consular Reports."

The Department of Commerce was organized about three years ago; the Bureau of Manufactures was not organized for fully a year after the organization of the Department and mainly for the reason that Congress which provided in a mandatory manner that the Bureau of Manufactures should be charged with the promotion and fostering of trade and commerce, domestic and foreign, did not provide anything like adequate facilities for carrying on that work. However, the start was made and we think we have made fair progress and have succeeded in convincing Congress that we are deserving of greater consideration than they gave us at the outset.

The Bureau of Manufactures is charged in this general work to which I have alluded with the publication of the Consular Reports. The great organizations representing the industrial activities and the great commercial industries of the country, have been for years in the habit of meeting annually in Washington and resolving, among other things, that the Consular service should be reformed in order that they might be enabled to do more trade with foreign countries. As a matter of fact, these gentlemen, as a rule, have not been reading the advice which the Consuls have been preparing for them and which the Department of State, prior to the assumption of the duty of publication by the Department of Commerce, has been daily distributing to them.

It is fashionable and popular among these organizations, and to some extent among newspaper publishers, both daily and periodical, to abuse the Consuls and minimize their efficiency and their value. After two years of intimate association with the Consular service, during which period every line that has been written by the Consuls of the world has passed under my observation, I have no hesitation in saying that the Consular service of the United States in the aggregate is at least equal if not superior to that of any similar service in the world. I will admit there are some weak units in it, but in the aggregate it is not surpassed by any, and this fact is admitted by the papers of foreign countries which follow more closely the work of our Consular service than do many of our own people.

Until the establishment of the Bureau of Manufactures there has been no organized or systematic effort on the part of this gov-

ernment to promote foreign trade. We have been so busy with our own markets, they have been so profitable and so expansive, that we had neither time nor opportunity to cultivate foreign markets. Therefore, our people, while the best manufacturers perhaps in the world, may be said to be among the worst merchants. They have come to the Bureau of Manufactures recently, within the last year or two, by reason of the fact that our productive development has reached a point where it far exceeds our ability to consume and therefore we must find markets for the sale of what they call their surplus goods. They have overlooked the fact, however, that surplus goods that are made for this climate and people are not adapted to other climates and to other people, and they must realize—and many of them are coming to realize—that this so-called surplus must be dumped upon their own bargain counters and not sent abroad to people whose tastes and habits and training are in no way adjusted to that line of goods.

Now the trade papers of the country can be of immense advantage and benefit to the Bureau of Manufactures and to the manufacturing industries of the country. Our effort is to educate our people about the conditions of foreign markets and to prevail upon them to make goods to meet those conditions. Now you gentlemen who are here, publish papers that reach certain fields of activity and can be very helpful in this direction. We shall be glad to distribute among you, daily, these reports which are edited with great care, and they may be used at once without much supervision and very little labor in your columns. Useful as you have been in the past and are in the present, you can be infinitely more useful and valuable if you will take up this matter of educating our people into the duty and interest of finding out what are the conditions in foreign markets and urging them to adjust themselves to those conditions.

We cannot change the tastes and the habits and the prejudices of foreign people that are based on training of generations, by our civilization, however advanced it may be. These tastes may be primitive, they may be barbaric, but they are their tastes and their habits and their interests and we should keep our philanthropy at home and send goods abroad that will sell regardless of whether in our opinion they are the best that may be adapted to the people whose markets we are seeking. Now that is the work that the Bureau of Manufactures is doing. We are distributing a paper daily to the number of about ten thousand, and we are issuing a monthly consolidation of those reports, classified geographically and logically by subjects, and these publications will be immensely helpful to you not only in making your paper interesting and valuable to your readers, but to the promotion of the foreign trade of the United States.

The extent to which our trade has grown within the past few years is hardly realized by people who have not made this subject a matter of study. Our exports have reached the enormous volume of one billion, eight hundred million dollars annually. Of that, fully one-half are manufactured products. The belief is somewhat general that the great agricultural staples of the country which sell themselves without effort, constitute the bulk of our foreign trade. But when you consider that many of the products classified as agricultural are purely industrial, such as flour and things of that kind which are just as much finished products as a coat or a hat, you will see that our manufactured products properly deserve to be classified. These products I have named, the products of agriculture, in their manufactured form, properly deserve to be classified as manufactured products. Our manufactures have reached the enormous sum of seventeen billion dollars annually in value. It goes without saying that this output will advance just in proportion as we progress, and it also goes without saying that we are obliged, or will be obliged in the immediate future, to find channels of consumption of the surplus goods which really no longer we are able to consume at home.

The daily press is really of very little value to us in the promotion of foreign markets. The trade press is almost indispensable to us.

BALING BRITISH COLONIAL COTTON.

The success of the British Cotton Growing Association, which is becoming more and more assured by the good results obtained at their various plantations, is not, apparently, going to lead them into the mistake which the Southern States of America made when it was found that cotton growing was to be a commercial success. From the beginning attention has been paid to the method of handling the cotton after it has left the plant, and the best gins, presses, and systems of baling have been adopted in order that the raw cotton, when it arrives at the mill, may be in the best possible condition. To the discredit of the American planters, the question of the condition in which the raw cotton arrives at the mill has been entirely neglected, with the result that the American bale has a bad reputation among all cotton merchants. The British Cotton Growing Association therefore determined that the bales which were sent out from their ginning factories should be packed and baled according to the best system. It was, however, found that, though fairly uniform in size, the weight of the bales varied, and that the presses used

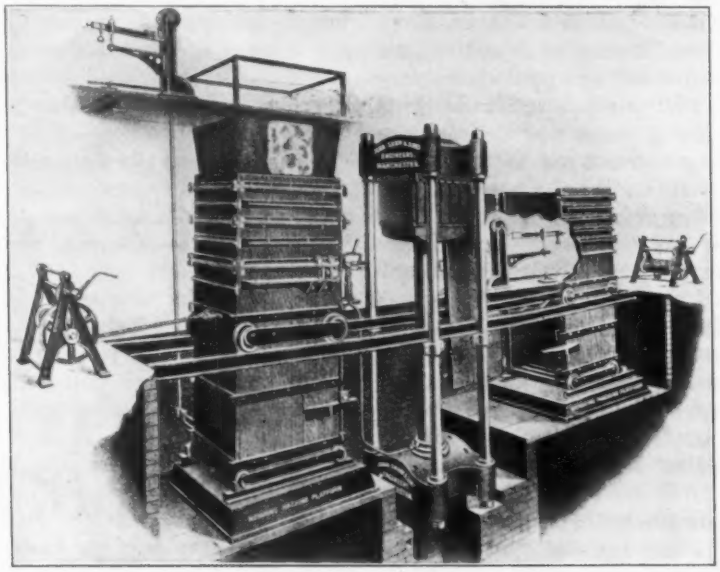


FIG. 1.

FIG. 2. NIGERIAN COTTON.

FIG. 3. AMERICAN COTTON.

were in many cases put out of order in consequence of the fact that the overloading of the press quickly affected the pumps.

In order to avoid this, and also to enable a uniform weight of bale to be obtained, Messrs. Hutton and Himbury, officials of the British Cotton Growing Association, patented a box weighing arrangement, of which we give an illustration in Fig. 1. By means of this arrangement a uniform weight of raw cotton is obtained in every bale, the loose material being weighed previous to pressing, while all bales are also of uniform shipping dimensions. The advantages obtained are apparent, for in addition to the improved appearance of the bale, which is shown compared with the American bale in Figs. 2 and 3, the canvas covering for the bales and the hoops can be cut to exact lengths, preventing waste of material and resulting in a most economical bale, while the weight of a shipment of cotton may easily be ascertained.

The left-hand side of the illustration, Fig. 1, represents a two-story building, the cotton being fed into the press-box from a floor above through a canvas hopper. The steelyard of the weighing machine is fixed on this floor, and the weight of the cotton in the box can be readily ascertained, or arrangements may be made so that when, say, 400 lbs. of cotton has been fed, an electric connection rings a bell. The box is then passed under the press (300 tons), which is put into action; then the box is withdrawn and the ordinary baling operations continued. The right-hand side of the illustration shows the arrangement for a one-story building. It will be seen that the pressing is continuous, the box on one side being filled while the other is being prepared for pressing, etc., and in order to render the weight of raw cotton in each bale uniform, the box and tare are balanced with an adjustable balance weight.

This arrangement is being adopted in all the ginning factories of the Association, while factories in China and South Africa have also been equipped. It is also thought that, owing to the impression made upon the American delegates at the recent Vienna Congress, who were not slow to recognize its advantages, the arrangement will be adopted in the cotton fields of the United States.—The Textile Manufacturer.

SIZING COTTON YARN.

BY HOWARD L. QUICK.

Having read the article on "Sizing Cotton Yarn" in the September number of the Textile World Record, I beg leave to offer a few suggestions from the standpoint of the bleacher and finisher.

The greater part of all cotton piece goods and cotton and silk piece goods manufactured in this country is woven by one mill and bleached, dyed and finished by another. In most cases the goods are bleached and finished for the account of a commission house or a so-called converter. Thus the raw goods manufacturer and the bleacher and finisher very rarely come in direct contact. In some unusual cases the finisher does not even know who made the goods he is finishing. Now it is obvious that this condition is not conducive to the best results in the finished products. The raw goods manufacturer and the bleacher and finisher should work together to obtain the best results. Suggestions could be made to advantage by both parties. It is a regrettable fact, however, that such suggestions are occasionally taken amiss.

Goods are usually sold to the converter from a raw sample. The converter sends the sample to his finisher or divides it among two or three. His orders depend upon results that the finishers produce. The finisher seldom hears the manufacturer's criticism and very probably the manufacturer seldom has the opportunity to criticise. Now this does not help any of the parties concerned. The fact that these conditions do not exist where a finisher is working directly for the account of a manufacturer, even though it be through an agent, shows that the importance of such co-operation is appreciated by some.

Very often when, having been satisfactory for some length of time, a finisher's work ceases to meet with the approval of the converter, there is a controversy as to the cause.

If the finisher can see no reason for his work being unsatisfactory, he may attribute the fault to the manufacturer of the raw goods. It must be admitted that sometimes he does so unjustly. It avails him little, however, unless he can substantiate his claims by actual proof from samples taken from the raw goods in question. In nine cases out of ten the manufacturer could have avoided the trouble, if it were of his making, if he had realized the importance of some small and apparently unimportant detail. Such a detail is the use of proper ingredients for sizing the cotton yarns.

The process of bleaching consists, primarily in removing the objectionable impurities and the natural and technical coloring matters in order to produce a good white. The removal of the impurities other than those which give color to the goods, although of minor importance, is in most instances a necessity, as their presence tends to hinder the bleaching and may cause trouble in the processes of dyeing and finishing.

Now most of the materials introduced into the yarn in sizing may be looked upon as impurities, and unless great care is used in their selection they may cause a great deal of trouble for the bleacher and may even be a factor in the quality of the finished product. We will consider the ingredients of a sizing mixture in the order of their importance.

First is a stiffening material, which serves also to stick the fibers of the yarn together, thereby increasing its strength, and as a protection from the severe treatment it receives in wearing. Starch is generally used, constarch being mentioned as the best. It has so many advantages that it probably could not be replaced. It is not readily washed out of the cloth when it has been well applied and worked in. It does no harm in all cotton goods, but, as will be mentioned later, is of considerable importance on cotton and silk union goods. In this connection dextrine may be mentioned as being of value. It has many of the advantages of starch. A mixture of dextrine and starch gives a very much smoother solution and by varying the quantity of dextrine the thickness of the mixture can be very nicely controlled. As an illustration, a solution of five pounds of cornstarch and five pounds of potato dextrine in ten gallons of water will be thinner, smoother, and have far better penetrating qualities than a solution of ten gallons of water with five pounds of starch alone. Dextrine used alone would cause a small amount of stickiness in the yarn but not when judicially mixed with starch. A size made of starch and dextrine will wash out more readily than one made of starch alone, but when damp or dry it will stand as well as starch. The best German potato dextrine is worth 5 3/4 cents per pound.

As a softener tallow or oil is usually used. Mineral oils, some animal oils, and many vegetable oils cannot be saponified and therefore are very hard to remove. If not entirely removed they are very likely to affect the white produced, and in some cases even cause stains. A judicious selection is all that is necessary. In the case of cotton goods tallow will do very well, but for cotton and silk goods the matter is more serious. Turkey red oil, however, is equal in softening properties to any other oil, will make the yarn just as smooth, is soluble in water and will assist the penetrating of the thickening substances. Furthermore it is an aid to the bleacher. Japan wax can be removed from cotton goods, but not so readily from cotton and silk. It gives the yarn a very smooth and tough surface, and is preferable to oil in all cases.

To obtain the proper amount of hygroscopicity glycerine may be recommended. It is also a good softener and unless used to excess will never give any trouble. Of the metallic salts, chloride of zinc is probably the best, but it is never wise to introduce metallic salts into a piece of cloth which must subsequently undergo chemical treatment. Chloride of magnesium will cause tenderness if the goods are subjected to the least excess of heat in singeing.

Coloring matter should never be added when the goods are intended for bleaching or dyeing after weaving.

Much more might be said on this subject, but the vital point is that in sizing, as well as in the many other processes of manufacture of the raw goods, every effort should

be made to avoid introducing materials that will hinder the bleaching, as at best the goods get a very strenuous treatment.

Of much more importance is this matter to cotton and silk union goods. The silk is ever present to prevent the severe treatment that the cotton should get. Where cotton goods may be boiled for a total of 24 hours in a solution of caustic soda, the cotton and silk piece goods may be boiled only a few hours in a solution of absolutely neutral soap. The number of available chemicals and processes is very limited. Yet these goods must be bleached almost as much as cotton goods.

Everything that the raw goods manufacturer can do to facilitate the work of the bleacher and finisher will be of advantage to himself. Lessening the cost of bleaching and finishing makes the article cheaper and therefore more salable. Shortening the amount of treatment in the process of bleaching will improve the quality of the finished product again making a more salable article. Both help the manufacturer. Remember, the bleacher and finisher has troubles of his own, yet with all these he must contend with the troubles and faults of all those who have worked on the goods before they came into his hands.

THE SETTING AND CARE OF DOFFER RINGS.

BY A. B. H.

First, the doffers should be perfectly clean; any roughness or dirt under the rings will cause trouble when running. If an Apperly or any similar feed is used, it is better to have the waste ring on the top doffer on the same side of the card as the wide end of the feed. If placed in this way there will be less danger from lumps in the roving. Great care should be taken in marking off a ring board. Some carders mark them in spaces for two rings and set for top rings at one side of the space, and for the bottom rings at the other side, but I always divide this space with a mark, one space the width of the top ring and one for the bottom, as I think rings can be set more accurately if there is a mark for both sides of the ring. Perfect work cannot be made unless the rings are set right; they must all be the same distance apart. There is only one case where this rule may be departed from and that is in the top waste ring. This may be placed 1/16 of an inch farther from the next ring, which will give the end ring on the bottom doffer a little more stock. On some kinds of work this is needed to keep it up in weight with the others.

The next thing to look after is the inside packing. My favorite way of packing is to take a bobbin of yarn, set the doffer running in the grinder, fill the space between the leather with yarn, then see that there are no threads of yarn on the leather, then take some glue and a stick no wider than the space between the leather, start at one end, and put glue on the yarn for half or three-quarters of an inch. Make these spots on the yarn opposite each other in every space the whole length of the doffer. Make four of these rows, one at each quarter, smooth the glue down and let it set; it is then ready for the outside packing. Care should be taken that the packing is not wide enough to crowd the wire for if the wire is crowded so the points of the outside row of wire come near the next row, no good work can be done. Care should also be taken not to crowd the wire where the ends are scarfed and glued.

After inspection to see that all the wire is in place it is ready to be ground. If there are any high wires or any bent back they must be put in place with a tube before grinding. Grinding should be very light, usually from one-half to one hour is enough. Polish with a good smooth hand card. To keep a set of rings in good condition a hand card should be kept and used only for stripping the rings. If care is used in the stripping and setting and a tube is used to put in place all wire that has been raised from any cause, the rings need not be ground for a long time; and are all the better if not ground as the stock running on them will wear them to a finer needle point than can be put on with a grinder. This is what every good carder wants.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring ,not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Moisture in Woolen Goods.

Editor Textile World Record:

Your article in regard to moisture in worsted yarn reminds me of a method adopted to increase the weight of blankets in a mill in which I once worked. A river ran under one end of the mill and it was the practice to store any goods that came out light, in a room over the water. By leaving them there for a week or two the weight would be increased 5 to 10 per cent. Blankets weighing 4 pounds as they came from the press would, in a week's time, weigh 4 1/4 pounds.

Champlain.

Bleaching with Permanganate of Potash.

Editor Textile World Record:

Please give me a formula for bleaching wool and cotton with permanganate of potash.

Richards (910).

To bleach cotton with permanganate, the boiled off material is treated in a bath containing

9 oz. permanganate of potassium

and

8.4 oz. sulphuric acid,

calculated for

100 lbs. cotton.

Work in this bath until the liquid has completely lost its color, then rinse in order to remove most of the oxide of manganese. Now enter in a weak bath of about 11 1/2 ozs. bisulphite of soda, 38° Be., acidulated with sulphuric acid to remove the last traces of the brown oxide. Rinse well and wash in a bath of carbonate of soda, containing 1 lb. per 100 lbs. of goods, so that any acid may be neutralized.

To bleach wool with permanganate:

100 lbs. of well scoured wool

are treated in a bath containing

4 lbs. of permanganate of potassium,

and

1½ lbs. sulphate of magnesium.

Work in this until the solution is decolorized, rinse and then enter in the bisulphite bath, in order to remove any brown oxide which may still adhere. Repeat these two baths and finally wash in clean water. The wool is now soaped in a bath containing:

1½ lbs. of soap,

¾ lbs. ammonia,

¼ lbs. Glauber salt.

Some bleachers prefer to add sulphuric to the permanganate bath, claiming that the fibre is less affected. In this case the yarn is not colored brown as the oxide is immediately dissolved. Fifteen ounces of acid are necessary for each 16 ounces of potassium permanganate used.

Fairmount.

Jammed Card Clothing.

Editor Textile World Record:

Quite a while ago some of my card cylinders got a few slight jams and the wire was straightened and made as good as new. But I notice those places always leave a dark mark when the card is working. When the cylinder is stripped clean of course it is not noticeable. The wire is sharp and everything appears to be all right, but I don't like the looks of those dark marks. If there is a way it can be remedied I should like to know it.

Danby (920).

If the steel tempered wire on a card gets jammed it can never be raised and made as good as new. The wire is so hard that if it is once bent it cannot be scraped up, and a good job can be done only by using a tube and getting up each individual wire separately. Even then some wires will be longer or higher than others and the spot will always show a black mark. There is no way to prevent it.

Henry Kreuzer.

I have never seen a jam picked up to be as good as new and I believe it is impossible to do it on tempered steel wire. With the old soft wire a much better job could be done, but with steel wire it is quite a different thing. I have picked up jams so that they could not be detected by the hand, but they would show the dark spots when the card got to work. The cylinder will do good work after quite a large jam has been picked up, but a doffer is different. A jam of any size on a doffer is sure to show up in the web no matter how well it is picked up. I believe it is impossible to get the wires into the exact position they occupied before they were jammed. The web will be weak in those places.

J. F. M.

Variation in Woolen Roving.

Editor Textile World Record:

With our woolen cards connected by Apperly feeds and with a Bramwell feeder on the first breaker we have 10 to 15 grains variation on 50 yards of roving from different spools. All the belts are tight. Can you suggest what might cause the trouble? Glendyer (922).

Assuming that the top and bottom spools weigh alike each time they are taken off, the variation should not be more than four grains in 50 yards of roving; if more than that there is something wrong somewhere. Following are some of the causes for uneven work on cards fitted up in this way: The scale weighing the stock may not be so sensitive in tipping as it ought to be. The Bramwell feed may be allowed to run too near empty, and then be crowded too full. Another cause which is quite common in many card rooms arises when the drawing breaks between the cards and the Apperly feed runs partly out. The attendant will take the drawing that has run on the floor and lay it on the Apperly feed. This may be laid on much lighter or heavier than it ought to be. This is a cause of a great deal of unevenness in roving, as the card that is partly run out will cause light spools and that which has been laid on by hand may cause either light, heavy or lumpy roving.

Sometimes the card strippers are not so careful as they should be. On starting a card after stripping the end will sometimes be put up when either too light or too heavy; more often too heavy. The first thing is to see that the Bramwell feed is working properly. If the stock goes into the card evenly and runs continuously without breaking down and the end is laid on evenly on the Apperly feed and runs smoothly, and top and bottom spools are alike in weight, there should be no unevenness in the weight of the roving. A. B. H.

Replying to "Glendyer's" question, the first thing to do to obtain uniform roving is to have the stock mixed uniformly in the picking room. Great care should also be taken in oiling the stock. The material should be mixed in thin layers. I prefer to use an automatic oiler rather than to oil the stock from a can by hand. The machine distributes the oil in a finer spray, consequently the oil is more evenly and thoroughly distributed throughout the stock.

The feeder on the first breaker should not be overloaded. The stock should be thrown into it loosely and not in large armfuls. Set the comb about 3/4 inch from the spike apron. The comb, however, should be adjusted to suit the grade of stock being handled. Do not let the feeder run less than one-quarter full. Set the wipe apron so that it will strike the point of the spike apron. Run the wipe apron driving roller about 160 r. p. m., continuously and not intermittently with the spike apron. At the speed mentioned there is very little stock left on the apron. What little drops into the pan does not amount to anything. Sometimes there will be a large roll of stock hanging to the edge of the shell. This often drops into the pan before the pan is dumped, increasing the quantity of stock fed into the card.

Do not run the feeder any faster than is necessary to get the weight required in time. Running the feeder fast shakes it so much that sometimes the pan will go down before it gets its weight of stock. See that the amount of stock delivered from the pan is sufficient to make a solid feed. The pan should be about three-quarters full when dumped. The push board should place the different deliveries of stock together so as to make a uniform feed without any thin places.

There should be as many doublings as possible on the second breaker and finisher without giving trouble in raising up or pushing out back of the traveler rollers.

The sliver should be as soft as possible and not have it break when passing to the Apperly feeders. Breaking of the sliver not only causes delay but makes irregular work.

The second breaker roving should not be tighter on one side of the finisher Apperly than on the other, unless one side feeds heavier than the other. In that case, draw a little on the heavy side and run slack on the light side.

By attending to these points and keeping the belts tight so that they will not slip a carder will get as good results as can be expected.

Ironside.

Sometimes the variation in the size of yarn or roping is caused in the picking room, when there is light and heavy material blended together. The light stock will be blown to the far end of gauze room, while the heavy portions will fall at the mouth of the picker. In this case the stock should be again thoroughly blended by hand before putting it into Bramwell feeders.

The trouble may also be caused on the feeder. After a feeder has been at work for ten or fifteen years, many of the small parts should be renewed, especially the fulcrums, or balancing part of the scales. They will wear out and prevent the machine from weighing correctly.

If the scale works smoothly and the comb is adjusted properly, and the variations still occur in the roping, the following device will be of great advantage in securing even work: Fasten a piece

of tin or zinc on the cross-piece in front and on top of the scale pan, as shown in the illustration. All the stock delivered by the stripper apron must strike this tin or zinc before falling into the scale pans. If adjusted properly, every particle of stock must strike the scale pan at the same

distance from the fulcrum, whether the feed box is overfull or nearly empty, thus insuring comparatively even work at the Bramwell feeder.

Next make the side drawing from first breaker card as thin as consistent with the kind of stock used, running the doffer faster to get the desired quantity. Then get as many doublings on second breaker Apperly feed table as possible without springing the feed rolls. Have all the belts tight and the trouble should disappear. Anthony.

Setting Cotton Cards.

Editor Textile World Record:

I have some very nitty 1 3/8 staple cotton from which I have to spin 80s carded filling. Kindly tell me the best speeds to use for the beaters, how far off to set the beater blades from the feed rolls, and the best settings for feed plate on cards, speed of cylinder, pickers, etc., and any other points that will help me to get the best results.

Duluth (931).

Cotton that is nitty from the bale, due probably to its nature, as in some growths of Peeler and white Egyptian, or from improper ginning, is more easily nepped during its passage through the various processes of preparing and spinning, consequently high speeds and heavy slivers must necessarily be avoided if good quality is to be obtained.

If the picking machinery will give a good even lap with two processes in this department, the intermediate process can be dispensed with and the laps taken direct from the opener to the finisher lapper. In this instance I believe too much beating is far worse than too little. The speed of these machines, if three bladed, should not exceed 950 r. p. m.; if two bladed, 1,100 r. p. m. They should be set to the feed roll so as to allow the fibres to be freed from the bite of the rollers before being struck by the beater. The actual distance of the beater from the edge of the feed roll will, of course, depend on the diameter of the rolls.

Care should be taken to have the beaters well balanced and in good condition on the striking edge of the blades. If much worn they should be planed again or the beater turned around. The cut-off or stripping rail should be set (if adjustable) close enough to prevent any cotton from being carried around and thus nepped. Fans and draughts should also have special attention, as they have very important functions to perform in the cleaning processes. A lap weighing 12 ounces per yard, 40 inches wide, could be used for the cards, which are probably of the revolving flat type.

Cards with cylinders 50 inches in diameter should be run 165 to 170 r. p. m.; any reduction in the speed of the cylinder would reduce the carding surface and the efficiency of the machine. The draft should be from 130 to 140; licker-in, 9 inches in diameter; speed, 420 r. p. m. and set to 7s gauge; mote knives as close as possible without touching; feed plate, to 7s; doffer, to 7s; doffing comb, to 7s; cards to be stripped at least three times daily. The production of a card should be 400 pounds a week, the quality depending on the condition of the card clothing, grinding, etc.

Long or excessive drafts must be avoided in all subsequent processes, as this character of cotton will no doubt show quickly the effects of overworking. It would be useless for me to try to give an arrangement of weights and drafts required for 80s carded filling, as I do not know the lay-out of the machinery in this particular mill, whether it is intended to use three or four processes of drawing, or whether the equipment provides for fine jack frames. Bowling Green.

In giving the settings and speeds for pickers and cards on 1 3/8-inch cotton which has a tendency to be "nippy," it must be understood at the beginning that definite statements can be made only when the surrounding circumstances are known. The following general statements, however, will serve as a basis on which to work.

In the first place if three processes of pickers are to be used, the breaker may have a beater speed of 1200 r. p. m. while the intermediate and finisher pickers would have a beater speed of about 1100 r. p. m.; assuming in each case a two-bladed beater is used.

Many mills on fine yarns use only two pickers, the breaker and finisher, and in this case the former could have a beater speed of 1300 and the latter 1150 r. p. m. and give satisfactory results.

If three-bladed beaters are used on the machines the speed of the breaker beater should be from 1050 to 1100 r. p. m. and the finisher beater from 850 to 900 r. p. m.

With reference to the distance between the

beater blade and feed rolls, this may be 1/4 of an inch on the finishers where light weight laps are being treated, and 5/16 of an inch on the breaker where the bulk of cotton is greater.

The speed of the fan on the various pickers may give good results at about 1000 r. p. m., but this will depend on whether the grid bars are set close or open. Again the appearance of the droppings must determine to some extent the fan speed. If the dirt and other foreign matter is not completely removed, and the droppings are free from good fiber, then the speed of the fan may be reduced a little, or the speed of the beater increased. If the grid bars are adjustable and the changes suggested above would necessitate new pulleys, the same results might be obtained by opening up the bars a trifle.

The cards are undoubtedly the machines that will have to be watched carefully, because if 80s carded yarn is to be spun, the nep must be extracted at this point, as (unlike combed yarn) there is no combing or actual cleaning process to follow.

The speed of the card cylinders should be between 160 and 165 r. p. m. and the speed of the doffers about 8 r. p. m. on modern cards. The card setting and stripping, grinding, etc., must be done systematically and carefully; for instance, stripping will depend on the appearance of the "web," and should be done at least three times every day; if the card clothing is not in good condition it may be necessary to strip four times. Grinding must be done so as to complete all the cards in from three to four weeks on the cylinders and doffers, and in about six weeks in case of the flats.

The settings on the card may be as follows to get good work:

Between cylinder and licker 7/1000 of an inch.
Between cylinder and flats 7/1000 of an inch, two front settings.
Between cylinder and flats 10/1000 of an inch, three back settings.
Between cylinder and doffer 5/1000 of an inch.
Between feed plate and licker 10/1000 of an inch.
Between mote knives and licker 12/1000 of an inch.

Some of these settings might appear a trifle close, but on cards of the modern types with good clothing and careful grinding, they should be easily obtained. It is taken for granted that as 80s carded yarn is desired, the cards must be in good condition to get satisfactory results, as upon them the fibers depend entirely for the removal of the nep. J. T. B.

It is a very difficult thing to make good yarn of nitty stock. The nits will stick to the cotton to quite an extent anyway, in spite of all the efforts made to prevent it. A few years ago we had some very nitty stock and we got the best results by running the beaters so as to give about 40 blows per inch of stock delivered on our plain two bladed beaters. The Kershner beater could be run to give 60 blows per inch of stock delivered. With the Kershner beater we obtained a more even thread with less nits, but it did not break so high as the plain blade beater. The beaters were set 3/8 of an inch from the 3-inch feed roll with four laps in the back of 13 ounces per yard each. We made a 40-pound lap, 13 ounces per yard, in 12 minutes. The card cylinders were run 165 revolutions per minute and the doffers 10. The setting of the card was as follows:

Feed plate to licker-in	12/1000 of an inch
Mote knife to kicker-in	12/1000 of an inch
Licker screen nose	9/1000 of an inch
Licker screen back	1/8 of an inch
Cylinder screen back	32/1000 of an inch
Cylinder screen front	3/16 of an inch
Back plate lower edge	17/1000 of an inch
Back plate top edge	32/1000 of an inch

The stripper plate, or the front plate lower edge, we set 17/1000 of an inch, and the top edge, well off so as to take out a heavy strip, we set 32/1000 slack on gauge. The top is the place where the nits must be taken out if they come out at all and so we set the back at a 10/1000 gauge and the front as loose as we could run it without striking. The licker was set to the cylinder with 10/1000; doffer set as close as it could be run, 5/1000 and 7/1000 gauge. Draft of the card, 120.

We got the best results with these settings, but it does not prove that they should be taken as an invariable rule They will serve as a guide to work from, however, and the necessary changes can be made to suit particular conditions. J. F. M.

Production of Looms.

Editor Textile World Record:

In your May issue you speak of a loom production of 70 per cent. Is this considered a good production for a mill running on fancy worsteds or cotton worsteds? I should like to know what is a good percentage for a mill of this kind.

Kanter (887).

Many factors contribute toward varying the percentage of efficiency of looms and it is impossible to state whether the 70 per cent., which we used merely for illustration, is below what should be obtained or not. In the absence of full information regarding the size of yarn, number of looms run by a weaver, etc., it is impossible to give an estimate. We know of one mill making fancy cotton worsted stripes in which a loom efficiency of 90 to 95 per cent. is obtained.

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 236 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

The past month has witnessed the opening of a few lines of underwear for the fall of 1908. The representatives of the more important manufacturers of ladies' 50 cent ribbed goods have been in the West, and, while it has not been a case of selling up in ten days or so, as it was last season, yet we understand that some fairly good business has been taken by at least three of these concerns.

The Avalon Knitwear Co. are showing an eight-pound peeler and bleached garment at $3.75, with extra sizes at $4.00; suits at $7.25 and $7.75. It is understood that these are made of combed yarns, contracts for which were given last April. They are also showing a tuck stitch worsted garment at $4.50 that sold last season at $3.87 1/2 and a fine stitch worsted at $9.00, their price of which last year was $7.50. This same concern also have in their collection of samples, a line of men's combination suits made in fine gauge which we understand the large Western furnishing trade are placing liberal orders on. They show a men's carded yarn suit in ecru, silver, blue and tan at $7.50; also the same in combed yarn at $13.50, as well as the medium weight worsted at $13.50, which will no doubt, prove to be large sellers. These people require the jobbers to sign an agreement to sell the Setsnug cotton vests and pants at $4.50 for ordinary and $4.75 for extra sizes and the union suits at $9.00 for ordinary and $9.50 for extra sizes, terms 2/10, November 1st dating. These prices show the jobbers a better margin than they usually get on this class of merchandise, but it is predicted by many buyers that it will be a very slow matter to get the retailers to pay $4.50 net for a 50 cent garment, even though it be a very well advertised article, and that every effort will be made by them to buy a lower priced line.

The representative of the LaTosca Mills has also been in the West and is quoting eight-pound combed peeler and carded bleaches at $3.75 with the extra sizes at $4.00, and suits at $7.00 and $7.50. From the best information that we can get, the combed yarns that go into this class of merchandise are now nearly six cents a pound higher than a year ago. The fact that both of the above mentioned concerns are only asking an advance of 25 cents per dozen against the apparent increase in the cost of nearly 50 cents per dozen, would indicate that either they made some exceptionally advantageous purchases of yarn early in the year, or that they are taking long chances on a drop in the market in the future.

It is reported that the Alliance Knitting Co. have taken considerable business on eight-pound combed goods as low as $3.62 1/2, but as this is for February, March and April delivery for cash, it cannot be taken as an indication of what might be done on a basis of a fall dating.

The Campbell Knitting Mill Co. are not as yet showing their line of combed goods, but are taking some business on their carded lines at $3.37 1/2 and $3.50 and are also booking their orders on a line of children's shaped ribbed goods at $1.90 on which they have a large trade.

The Lackawanna Mills and Dunham Mills' sales agents are out soliciting business for fall of 1908 on their lines of wool and wool mixed goods at the same prices as for 1907, the agents claiming that the qualities are to be the same as last year.

The Morris Mills are showing the same lines at the same prices, as were shown in 1907 and have added a line of men's cotton ribbed shirts and drawers at $7.50 and have also a line of plush backs at the same price.

We do not believe that the buyers are as a rule, anxious to see the new lines opened so early, as they are all busy getting this year's business through the books. Many claim to have large stocks on hand which require their attention for the next thirty days to reduce, and we believe it would be better for all concerned if the general opening of all lines could be delayed until December 1st, at the earliest.

Jobbers report that spring business is coming in slowly, buyers showing very little interest during the past three weeks. This is probably due to the tight money market and the downward tendency of cotton, which possibly gives buyers the idea that they may be able to buy their spring goods cheaper later on.

HOSIERY.

From all reports obtainable, the hosiery business for fall, 1908, is not in a very rosy condition. It is true that the manufacturers are nearly all busy and are behind on their orders for spring, but stocks of heavy weights are accumulating in the hands of jobbers and retailers and the demand for goods for immediate delivery is exceedingly small, except on the lower end of lines of ladies' goods. Some of those most interested, state that the only panacea for the difficulty is a good cold snap and it is quite probable that this will have the effect of clearing the way for a more lively business. Retailers object to paying the advance prices for duplicates on spring lines in a great many cases and are buying lower grades and smaller quantities. This in connection with the financial condition and the decline in cotton helps to put a stop to active business.

Children's ribbed goods to retail at 12 1/2 cents to 15 cents are not well conditioned and unless an increased demand is felt very soon for this class of goods, there will be an accumulation of stock to dispose of, which will not strengthen matters.

As we look over the situation, we can see no cause for a change in the prices of any lines of hosiery for the reason that manufacturers never advanced their prices to the warranted basis, and therefore, need not reduce them in proportion, as the yarn prices have been reduced. It has been stated several times that a great many of the hosiery orders given for the low end of the spring line would not be delivered, having been taken at too low a price. Now that cotton and yarns have taken a slump, possibly manufacturers will see their way clear to fill all of these orders.

There is a strong organization of Western manufacturers of hosiery and they have agreed not to show any fall lines until December 1st. No doubt buyers are waiting until these lines are opened before showing much interest in the Eastern lines.

The fall showing of hosiery in the large department stores is interesting. We notice small black and white shepherd plaid designs being taken freely. Embroidered goods and plain solid colors are holding their own and it looks as if gauze weights would be good until winter sets in. Grotesque designs among which may be mentioned, dices, rings, playing cards, etc., have been popular with the younger men and are being brought out by the more exclusive houses for spring. It is also said that in London, they are wearing the most extreme patterns, such as, purple with yellow spots, black with pink stripes, large white and green checks and other hitherto unheard of combinations.

GLOVES.

A satisfactory business both in the matter of profit and volume has been done on fabric gloves during the past two months. The foreign market is not so strong as two months ago, there having been a number of cancellations given by Americans to German manufacturers.

Silk gloves for spring are not nearly as scarce in Chemnitz today, as was the case a year ago. At that time, prices had been advanced nearly 50 per cent. and were readily obtainable, as none of the goods could be had from the American manufacturers. Now that the conditions have become more normal, the American production has been taken first, as the values are better and the increased machinery set up in America will take care of considerable more business than last year.

As for fancy colors, we find very few orders being placed for spring, the general proportion being two-thirds black and one-third white, with very few mode, tan and grey, and nearly all in 12 button length.

The indications are that lace mitts will become quite popular before the summer of 1908 will have passed, quite a showing of these having been made at the Grand Prix and at the English Derby.

THE MANUFACTURE OF BRAID IN THE UNITED STATES.

BY FERDINAND THUN.

(Continued from October.)

BI-CIRCLE BRAIDING MACHINES.

While in the chronological order of the development of the industry, the lace braider should be the next subject of these articles, yet this branch of the braid industry is com-

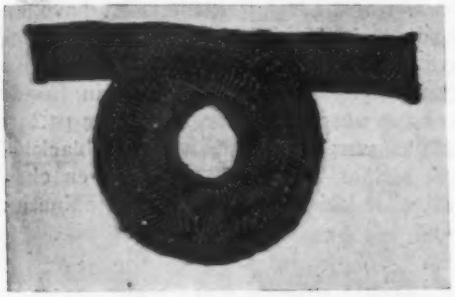
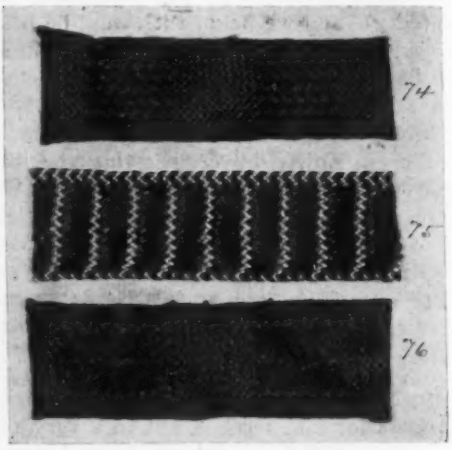


FIG. 73.

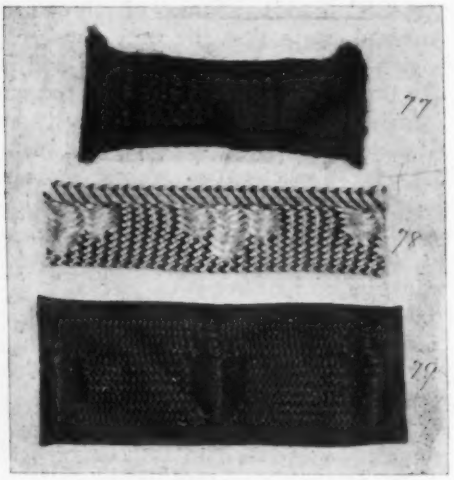
paratively of so little importance in this country as yet that I will first describe a more recent invention which has proved to be an important development in a comparatively short time.

It had long been the dream of the designers of braided fabrics and of the machine builders to produce figured effects on a braiding machine which would allow unlimited freedom of pattern, similar to the jacquard work produced on looms. In 1900 a patent was taken out by the writer and Henry Janssen, then constituting the firm of Thun & Janssen, for a braid having interwoven therewith, additional or pattern threads lying alternately on the surface of and between the overlying diagonal threads, as filling threads. These braids were made on a machine provided with radially aligned shuttle tracks intersecting with the serpen-



FIGS. 74, 75, 76.

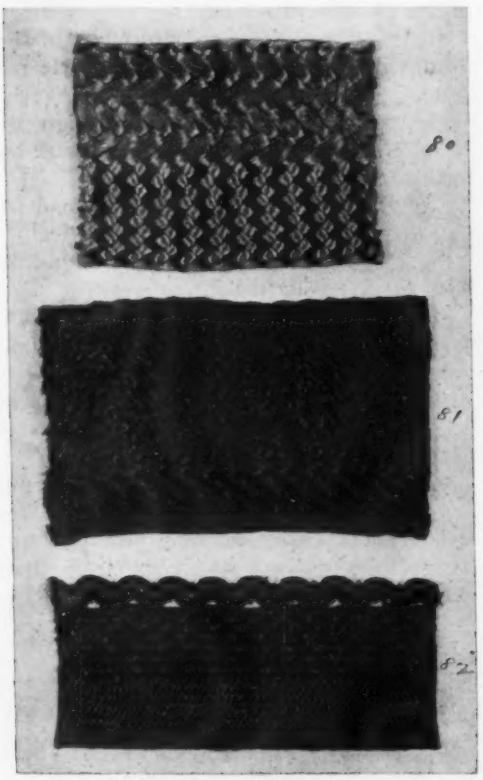
tine courses of the bobbin carriers. In other words, the machines were braiding machines with weaving attachments. These machines were successfully operated in the



FIGS. 77, 78, 79.

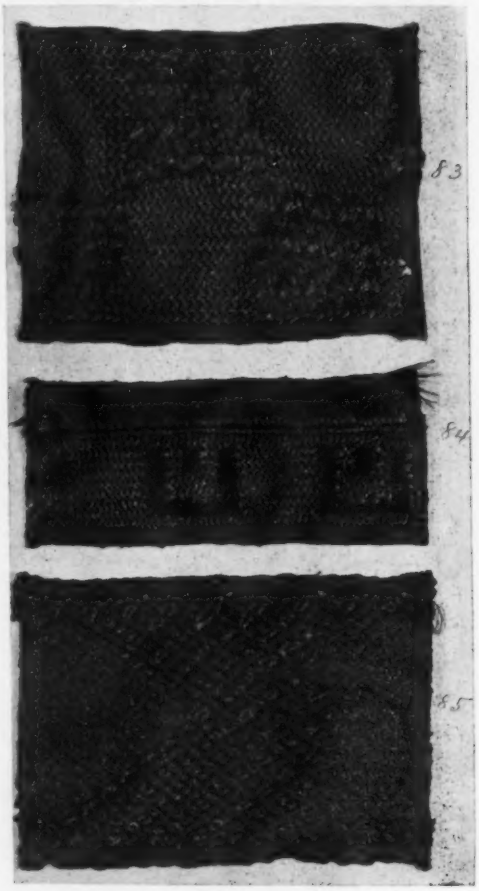
shops of the Textile Machine Works, but were never introduced into general practice because it was found that the reciprocating

motion of the shuttle carrier was very detrimental to the wearing qualities of the machine, and it was extremely difficult to devise a jacquard mechanism strong enough to con-



FIGS. 80, 81, 82.

trol the movements of these weaving carriers. The machine covered by United States patent No. 664,047 shows various constructions of these devices which were afterwards still further improved upon, but all efforts in that direction were abandoned when in 1903 it was discovered that practically the same figured effects could be obtained on a braiding machine having a double track consisting of an outer and inner course so arranged that the carriers could be guided at will from one course to the other by means of a pattern mechanism. The first machine of this kind was a straight machine with sixteen gears arranged in two rows of eight gears each. This necessarily made a very narrow fabric with very limited pattern possibilities. One step further in this direction was to arrange the gears in two concentric circles. The first machine of this kind with concentric gear circles was designed in 1903 by R. C. Rahm, chief draftsman of the Textile Machine Works, and an application for a United States patent was filed on October 14, 1904. This patent was granted on June 11, 1907, and bears the No. 856,985. It may safely be stated that with the invention of the bicircle machine a new development of the braid industry has been inaugurated, and

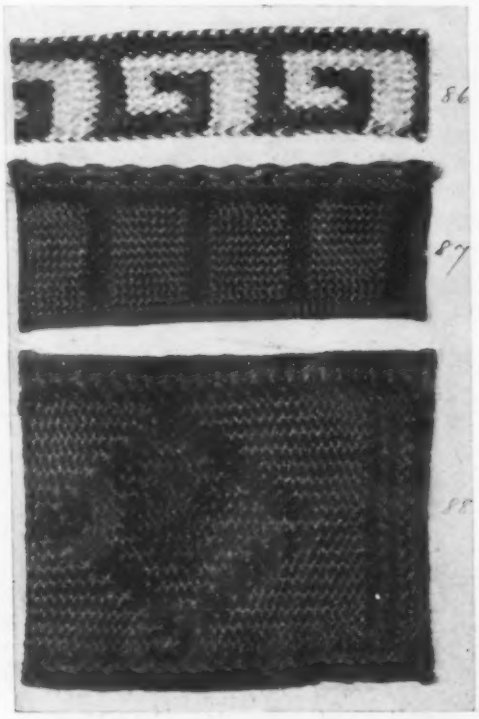


FIGS. 83, 84, 85.

that the possibilities of this machine are of a very wide range.

Before going into a more detailed description of the machine and its mode of operation, I will describe some of its products to illustrate the possibilities of the machine.

Fig. 73 shows a very simple pattern with figured effects resulting from the change of the weave. This pattern is made on an 8-line bi-circle machine, and shows the general characteristic of a braid, consisting in its adaptability of being laid into curves and loops.



FIGS. 86, 87, 88.

Fig. 74 is a similar pattern made on a 12-line bi-circle machine.

Fig. 75 shows a two-colored effect of simple design, made on a 12-line bi-circle machine.

Fig. 76 shows a square block design produced by a change of weave on a 12-line machine.

Fig. 77 shows a Grecian pattern made on a 12-line machine in a single color effect.

Fig. 78 shows a two-color design also made on a 12-line machine.

Fig. 79 shows a leaf figure obtained in solid colors by a mere change of weave on a 16-line machine.

Fig. 80 shows a two-color design with braided soutache effects on one side. It is made on a 12-line bi-circle machine.

Fig. 81 shows a very elaborate trimming made from narrow braids and artificial silk braided on a 12-line bi-circle machine.

Fig. 82 shows a 16-line bi-circle braid with a waved braid edge attached by sewing.

Fig. 83 shows a block pattern made on a 24-line bi-circle machine.

Fig. 84 shows a Grecian design made on a 12-line machine. The wide satin edge is pro-

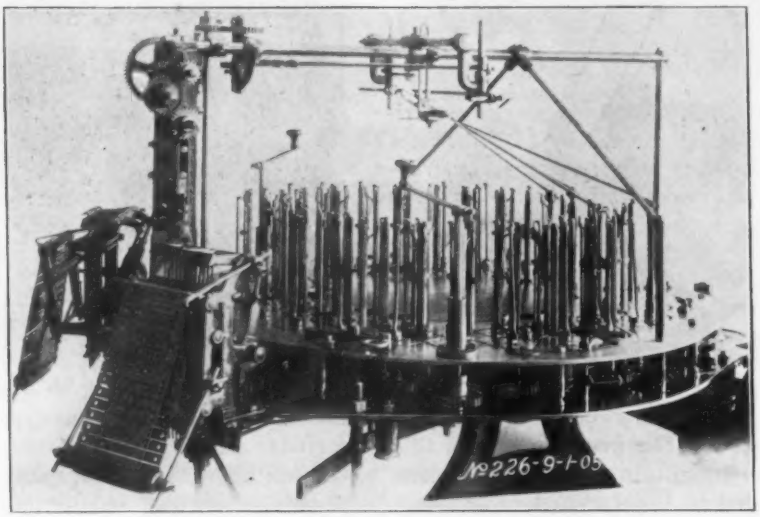


FIG. 89.

duced by inserting a wide flat filling or warp.

Fig. 85 is made on a 16-line bi-circle machine by using narrow braids interbraiding with cords and artificial silk. The design shows a square block alternating with a diamond.

Fig. 86 is made on a 12-line machine and shows a Grecian design in black and white.

quard to the left of the take-up roller stand operates the left hand switches, and the jacquard to the right of the roller stand operates the right hand switches, as will be more fully explained later in analyzing some of the designs. The illustration shows the communicating race circle courses with the carriers, although the photograph does not

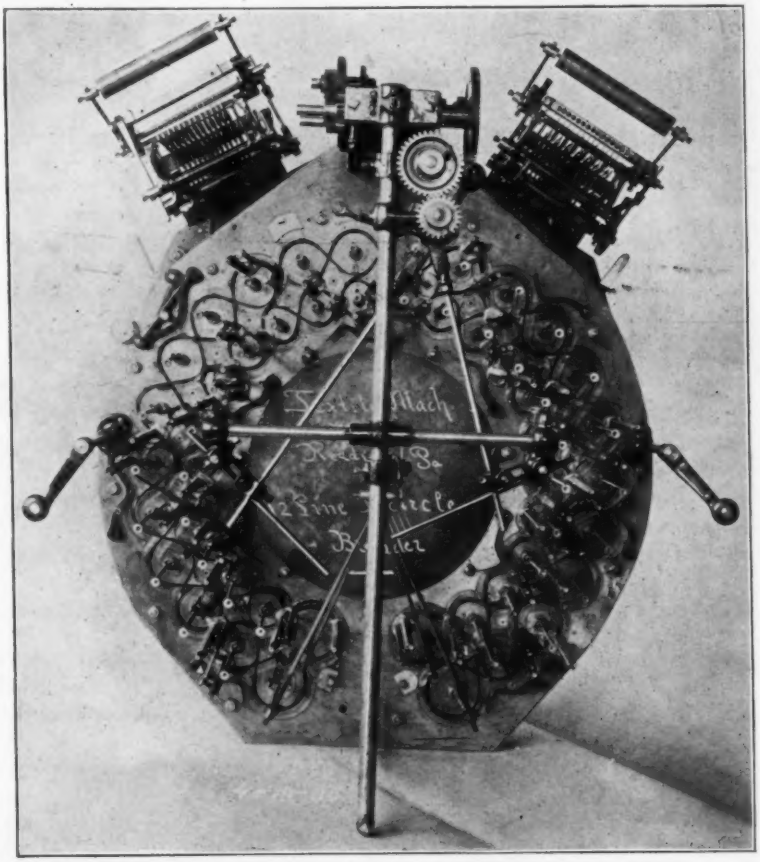


FIG. 90

Fig. 87 is made on a 16-line machine. In this pattern the waved braid edge is braided right into the pattern by running in a suitable warp.

Fig. 88 is an artificial silk braid made on a 24-line bi-circle machine.

Fig. 89 shows a 12-line bi-circle braider. It will be noticed that these machines are provided with two jacquards, one on each side of the take-up roller stand. The jac-

bring out the interposed switches very clearly. There are forty-nine carriers to a 12-line machine, as on a plain braider. The outer and inner course both consist of 4-horn gears and 5-horn terminals. The outer gears are radially aligned with the inner gears, and the outer course is arranged tangentially to the adjoining circle of the inner course so as to afford communication between the two whereby the carriers of

each course may be diverted into the other. To regulate the interchange of carriers double switches are provided between the two courses, the points of these switches being adapted to open or close such communication between the courses as determined by the position to which they are swung upon their telescoping pivotal supports; this position being automatically controlled by the jacquards and wires extending to the switches.

The two race circle courses being arranged concentric, and the gears of both courses on the same radial lines, the outer gears must be of a greater diameter than the inner gears. The horn gears of both courses being arranged for the same number of carriers, it is necessary that they be rotated in equal times notwithstanding the difference in diameters. This necessitates, of course, that the horn gears have to be specially made with every variation of the diameter of the machine, and the horn gears of the various sizes of bi-circle braiders are not interchangeable as is the case with the ordinary type of braiders.

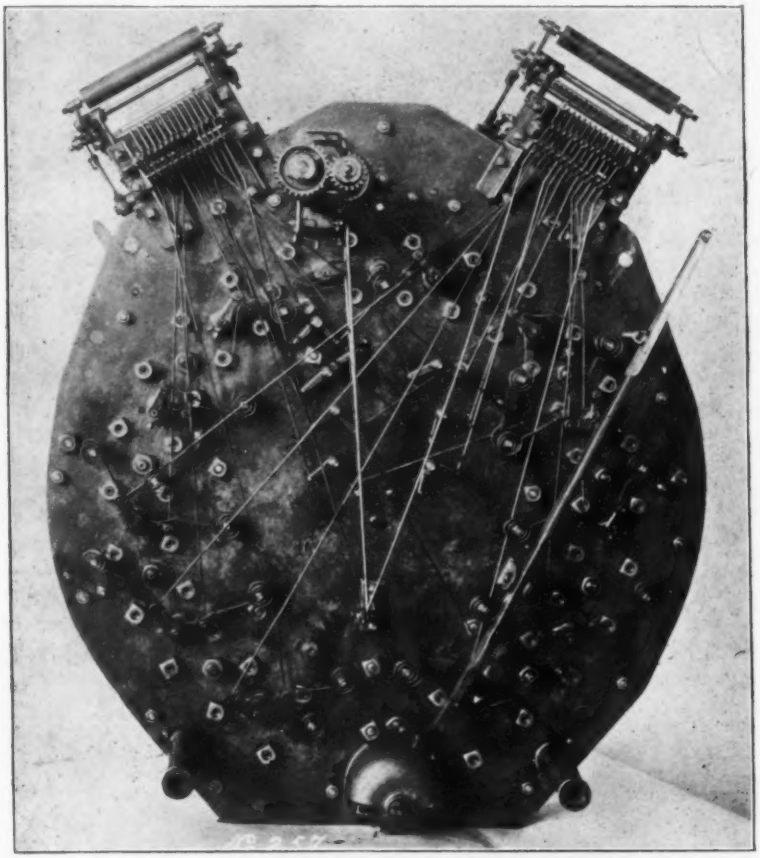


FIG. 91.

Fig. 90 shows a top view of a 12-line bi-circle braider and brings out the connections between the outer and inner gears and switches controlling the movement of the carriers from one course to the other.

Fig. 91 shows the bottom plate of a 12-line bi-circle braider and illustrates the manner in which the switches are connected to the jacquard apparatus by means of wires.

Inasmuch as these machines consist of two

complete gear circles, it will be clear that two separate braids can be formed by holding each set of carriers to its own course. It is from this feature of the machine that all of the pattern possibilities result. The machine may be used in two distinct ways:—

First, to produce patterns with color effects either by the use of warps or without.

Second, to produce various effects by altering the frequency of the crossings of the threads.

In most patterns a combination of the two principles will be applied, and an endless variation of new effects results from this.

(To be continued.)

A KNIT FABRIC FOR FLEECED GOODS.

The construction of the knit fabric shown at Fig. 1 has recently been patented by Scott and Williams, of Philadelphia. Fig. 1 shows the fabric with the face to the observer; Fig. 2 shows the back of the goods; Figs. 3 and 4 illustrate the manner in which the cloth is knit. A fabric, patented in 1902 and adapted for a fleece finish, consisted of two webs united at intervals by a loop of the yarn of one web engaging the other web, and the fabric forming the subject of the present improvement is of a similar character. Fig. 1 shows the face web, 1, and the back web, 2, the stitches of the face web being shaded in order to distinguish them more clearly from those of the back web. The two webs are

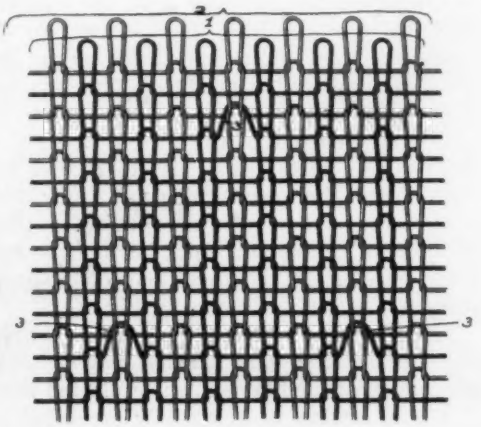


FIG. 1.

connected at intervals, as shown at 3, by loops of yarn of the face web engaging with wales of the back web, although any of the other modifications of the tying structure may be used if desired. The distinction between the old and the new fabric is that in the latter the stitches of both webs are drawn in the same direction, whereas in the former fabric the stitches of the face web were drawn to the front face and the stitches of the back web were drawn to the back face of the fabric. The exposed face of the back web of the old fabric therefore did not lend itself readily to the production of a fleece by brushing or gigging the yarn of which the back web was composed, but when the stitches of the back web are drawn towards the front face of the fabric, the exposed face of the back web presents a surface composed wholly of loops, as shown in Fig. 2, and the brushing or gigging to form a fleece can be readily effected.

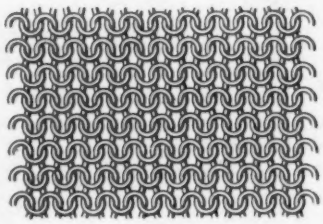


FIG. 2.

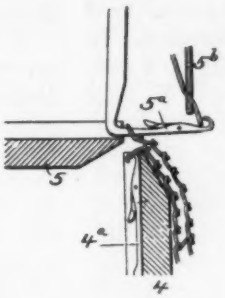


FIG. 3.

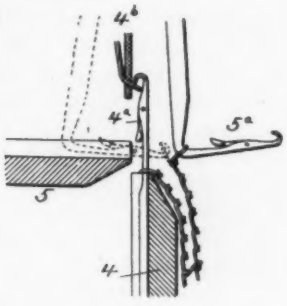


FIG. 4.

In the production of the improved fabric a knitting machine is used having two needle beds, 4 and 5, provided with needles, 4^a and 5^a, which are intended to be com-

bined with the usual cams for reciprocating the same for knitting purposes, and with one or more yarn feeds for each set of needles, the yarn feed for the needles, 4^a, being represented at 4^b in Fig. 4, and the yarn feed for the needles, 5^a, being represented at 5^b in Fig. 3.

Owing to the fact that both the cylinder and dial needles draw their stitches in the same direction, the web produced by the dial needles overlies that produced upon the cylinder needles and it is necessary to get this overlying web out of the way in order that the cylinder needles may rise to receive the yarn from the yarn guide, 4^b. For this reason the dial needles are projected clear of the dial, 5, and to a point beyond the cylinder needles, 4^a, wherever one of the yarn feeds, 4^b, occurs, as shown in Fig. 4.

In order to effect the tying of two webs together selected dial needles may be only partially projected, as shown by dotted lines in Fig. 4, instead of being fully projected as shown by full lines in said figure, whereby the partially projected dial needles will receive the yarn fed to the cylinder needles and will form loops which will be cast off from the special needles with their stitches at the next dial yarn feed, 5^b. The improved fabric can be made on either straight or circular machine.

THE COST OF HOSIERY.

BY DAN BUCKLIN.

Calculating the cost of manufactured goods has become of vital importance. In years past there was no thought of a cost system; such a thing was unknown. So long as the annual inventory showed a fair margin of profit to the manufacturer he was perfectly satisfied and did not care to investigate the matter thoroughly enough to find out the profit or loss on each article. During the last ten years there has been a decided change. Owing to the great prosperity throughout the country a greater demand has arisen for manufactured goods. There has been a greater demand for raw material and skilled labor. The manufacturer has been forced to pay higher prices for labor than ever before. This has made the cost of production much greater than in former years. Unluckily for the manufacturer it was found that owing to the strong competition it was impossible to increase the selling price of the goods in proportion to the increase in the cost of producing them. The only solutions of the difficulty were either to reduce the cost of production or to manufacture only such gods as would show a fair profit. In almost all hosiery and underwear mills it had been a practice to manufacture various styles to be used as leaders, which were placed on the market at a very low price. The manufacturers planned to make up what they lost on these goods by boosting the price on some of the better grades. No attention was paid to any particular style. It made no difference which article they made their profit on so long as the inventory showed a satisfactory profit.

Until recently few if any of the hosiery manufacturers were able to tell the exact cost of producing any particular style. At the present, time, however, every up-to-date manufacturer is trying to plan a cost system that will show which styles are paying the desired margin of profit. I have come across several methods of computing costs and have also put considerable hard work and study on the subject. This has resulted in forming a system which has proved very satisfactory. I have found it to be an almost hopeless task to find the exact cost of every article, but have succeeded in figuring the cost down to within a very few cents of the actual.

A cost system should be used only to ascertain which class of goods can be manufactured at a profit and which departments of the mill are on a paying basis. Some managers have even gone so far as to use the cost price as a basis for figuring the profits of the mill from month to month. This is a serious mistake as I do not think it possible to get a cost system exact enough to be used for this purpose in a large mill. In submitting this system I will first give the form of cost sheet and will then take up the various departments.

With this form it is necessary to have a separate cost sheet for each size and style.

For instance, in youths' hosiery made in sizes from 5 to 10 it would be necessary to have separate sheets for sizes 5 and 5 1/2, for 6 and 6 1/2, for 7 and 7 1/2, for 8 and 8 1/2, for 9 and for 9 1/2 and 10, as the cost of the different operations varies according to size.

Under the head of "Yarn and Thread" we have the kind of yarn used in the particular style of which we wish to find the cost; also the amount used and the price per pound,

COST SHEET.

Style Number..... **Selling Price**..... **Sizes**.....

Weight..... **Color**.....

Yarn and Thread.

Kind.....
Price.....
Amount.....
Cost.....

Card Room.

Picking.....
Carding.....
Spinning.....
Twisting.....
Winding.....
Waste.....
Wool.....
Cotton.....
Shoddy.....
Noils.....
Garnett.....
Superintendency.....
Total Cost.....

Knitting Room.

Ribber Legs.....
Cutting.....
Sorting.....
Topping.....
Footing.....
Waste.....
Superintendency.....
Total Cost.....

Looping Room.

Turning.....
Looping.....
Hemming.....
Pulling-in.....
Handling and Superintendency.....
Total Cost.....

Inspecting Room.

Mending.....
Turning.....
Superintendency.....
Total Cost.....

Dye Room.

Turning.....
Singeing.....
Fleecing.....
Dye Stuff.....
Drying.....
Water.....
Superintendency.....
Total Cost.....

Press Room.

Turning.....
Forming.....
Pressing.....
Brushing.....
Superintendency.....
Total Cost.....

Finishing Room.

Mating.....
Trimming.....
Stamping.....
Ticketing.....
Folding.....
Tying.....
Box.....
Boxing.....
Box Tying.....
Embroidering.....
Seconds.....
Superintendent.....

Shipping Room.

Packing Case.....
Superintendent.....
Total Cost.....

Power Dept.

Fuel.....
Oil.....
Water.....
Supplies.....
Superintendent.....
Total Cost.....

Fixed Expense.

Office Salaries.....
Salesmen Salaries.....
Depreciation.....
Interest.....
Taxes.....
Insurance.....
General Repairs.....
Total Cost.....

Repairs.

Needles.....
Forms and Boards.....
Machinists.....
Machine Supplies.....
Superintendent.....

Miscel. Expense.

Freight and Expense.....
Printing.....
Advertising.....
Miscel. Labor.....
Miscel. Items.....

Summary.

Yarn and Thread.....
Card Room.....
Knitting Room.....
Looping Room.....
Mending Room.....
Dye Room.....
Press Room.....
Finishing Room.....
Shipping Room.....
Power.....
Fixed Expense.....
Repairs.....
Miscel. Expense.....
Total Cost.....

and the total cost of the yarn. Next comes the card room where it is necessary to find the exact cost of the yarn per pound. This is readily done by calculating the exact cost of the various operations and materials, given in the form under the head of "Card Room." I hardly think it necessary to go into details as to how to find the cost of these operations as in most mills all the operators are paid by the pound. One item that may call for a little explanation is "Superintending." All day work, including the foreman, should come under this head, and all goods regardless of selling price should bear their share of this item.

After the card room comes the knitting department where we must find the exact cost per dozen of each operation. The costs of all these items are easily ascertained, with the possible exception of waste. About the only sure way to determine the exact amount of waste to each dozen is to weigh the yarn before coming into the knitting department and then weigh the work after it has been cut and inspected. The difference in the two will give the exact amount of waste. By counting up the number of dozen knit the exact amount of waste per dozen can be easily secured. In making our tests I weighed the whole production of the knitting room as it came into the department and again as it was sent out for an entire week. Waste is one of the most important matters pertaining to cost and too much attention cannot be paid to it. A good superintendent of knitting can save his salary every day on waste alone by giving it the proper attention.

Another item which may need some explanation is "Superintendency and Handling." I found the cost of this item per dozen by ascertaining the amount paid out and also the number of dozen produced from each department for the same length of time. From this the cost per dozen can be readily found.

After the knitting department comes the looping, inspecting, dyeing, pressing, finishing and shipping departments in the order named. I hardly think any of the items in these departments need any explanation as most of these operations are paid by the

dozen. This practically completes the direct cost.

In addition are the indirect costs, which we will classify under power, repairs, fixed expenses, and miscellaneous expenses. Under the head of "Power" comes fuel, oil, water, supplies and superintendency. It is necessary to find the exact percentage of these costs to charge up to each dozen, as each style, regardless of the selling price, must share in the mill or general expenses. An excellent way to determine these costs is to take the entire expense of the items for a year, and also the production of the mill for the same length of time. From these figures the exact cost per dozen is found.

Under the head of "Repairs" should come needles, forms, and boards, machinists and mill supplies. These costs should also be based on a year's business. Under the head of "Fixed Expense" should come office salaries, salesmen's salaries, depreciation of plant, interest on borrowed money, taxes, profit and loss, and insurance. These costs should also be computed by the year. Then under the head of "Miscellaneous Expense" we have freight and express, advertising, printing, miscellaneous labor, etc. These costs are to be reckoned the same as the fixed expenses.

If all these items are carefully and correctly figured out they will come as near to giving the exact cost as it is possible to get by any method. By the use of this system it should not be necessary to compile new cost sheets more than twice a year unless there have been some radical changes made in the prices paid for the different operations. In most mills where the operators are paid by the dozen the prices are seldom if ever changed, and when changes are made it affects only a few styles. Most mills make their yarn contracts for a period of six months and there is seldom any change in the price of yarns during the life of a contract. About the only chance for the costs of production to change during the six months' period is in the cost of superintending. As all day work must come under this head and certain departments are sometimes forced to break in a large number of new operators and pay them by the day for some time it will be readily seen that this item is apt to vary. I would suggest that the different foremen be required to hand in a monthly report of the cost of superintending in their departments. This will also show whether any of the departments are being operated at a greater cost than is indicated on the cost sheets. The foreman of each of the different departments should be required to hand in a daily report of the production of his department, giving the number of dozen, style and size. As the cost sheets show the cost of production of each style and size in every department the amount which should have been paid out according to the cost sheets of this department for any given length of time will be shown. By looking up the pay roll records and finding the amount which was actually paid out we can determine just where the leak is, if any exists.

Size of Worsted Yarn for Hosiery.

Editor Textile World Record:

I should like to know what size of worsted yarn in 2-ply will give the best results on a 4-inch cylinder with 56, 72, 88 or 120 needles.

Dalton (919).

This depends largely on the class of goods to be made. A heavier yarn is required for heavy ribbed lumbermen's goods than for men's half hose. Every machine is supposed to be subject to considerable variation and should knit several different numbers of yarn with equally good results as long as the machine is not overloaded or vice versa. Assuming that "Dalton" desires to knit heavy half hose the following sizes would be suitable:

120 needle, 2/14s to 2/18s.
88 needle, 2/10s to 2/14s.
72 needle, 2/6s to 2/10s.

If it is desired to foot heavy ribbed tops it would be advisable to use a little heavier yarn than that given in the table.

I have never used a machine as coarse as 56-needle and cannot give any definite answer for this particular gauge, but think 2/4s or 2/5s would be about right. Dan Bucklin.

It is not stated whether the goods are to be fulled or not; if they are it would require a finer yarn than otherwise. For ribbed goods I have found a 2/18s on 120 needles, 2/14s on 88 needles, 2/12s on 72 needles, 2/10s on 56 needles to give the best results. These sizes will apply to half hose the same as to ribbed hose for the same number of needles, but a great deal depends on

the weight of the goods to be made and better results are obtained by using yarn two or even four numbers finer on half hose.

Ravenswood.

Pressing Knit Goods.

Editor Textile World Record:

We are about to install two double screw power presses with 19 hollow steam plates each. As we are not familiar with these machines we would like you to advise us what is the best way of handling the goods from the cyclone dryers to the presses, how many layers of cardboard should be placed between each two plates to get the best results, and what production should be obtained from each press, leaving the goods in one hour with 40 pounds steam pressure and one hour with cold water. Dover (930).

After a lot has been dried, say 60 dozen, the goods should be stripped from the boards and taken to a convenient table for the boys to paper ready for the press. The number of layers of cardboard between the plates depends on the amount of pressing required in the goods and would be from 18 to 30 layers. I have found 24 layers to give excellent results on single thread medium half hose and ladies' goods. The exact amount can be determined best by using 24 at first and then more or less as the goods may require. The production from each press, allowing one hour for steaming and one hour for the cold water with, say, one-half hour to fill and empty the press, or four presses a day taking 24 layers, would be 508 dozen if the press papers hold 4 pair each, 760 dozen if they hold 5 pair, and 912 dozen if they hold 6 pair. This is for half hose. The production of ladies' goods would be half this quantity. Ravenswood.

KNITTING PATENTS.

HOSIERY and Making Same. 864,433. Robert W. Scott, Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa.

HOSIERY and Making Same. 864,432. Robert W. Scott, Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa.

KNITTED FABRIC. 865,279. Bernard T. Steber, Utica, N. Y., assignor to the Steber Machine Co., Utica, N. Y.

KNITTED WEB. 864,440. Louis N. D. Williams, Ogontz, Pa., assignor of one-half to Robert W. Scott, Leeds Point, N. J.

KNITTED WEB. Open-Work. 865,660. Robert W. Scott, Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa.

KNITTING MACHINE. Circular. 864,496. Louis N. D. Williams, Ogontz, and Harry Swinglehurst, Philadelphia, assignors to Scott & Williams.

KNITTING MACHINES. Sinker Wheel for Circular. 864,354. William T. Barratt, Bennington, Vt., assignor to Charles Cooper, Bennington, Vt.

KNITTING MACHINE. Circular. 868,276. Hermann A. Klemm, New York, assignor of one-half to James D. Leys, New York.

KNITTING MACHINE. Circular Independent Needle. 867,764. Heinrich Stoll, Jr., Reutlingen, Germany.

KNITTING MACHINE Take-up Device. 868,332 Hermann Donner, Chemnitz, Germany.

KNITTING MILL NEWS.

New Mills.

Indiana, Tipton. The contract for machinery to equip a knitting factory has been closed. It is reported that 50 knitting machines will be installed in the old Christian Church building and that manufacturing operations will begin about November 10.

Massachusetts, Hingham. The Hingham Knitting Co. has been incorporated to manufacture knitted fabrics. The capital stock is $12,000. Geo. Price of Hingham Centre will be president of the company, and Wm. Coppin, South Hingham, will be treasurer.

New Hampshire, Laconia. W. S. Lowe is about to start a small plant for making mercerized hosiery.

New York, Mellenville. The Wellington Knitting Mills, a new company manufacturing children's knit underwear, has started operations in the building formerly occupied by the A. P. Pitcher Co. Inc. New machinery has been installed and steam and water power are used. Jas. E. Phillip is proprietor of the new company, and Henry Watt, manager.

*New York, Port Leyden. The Port Leyden Knitting Company, recently reported incorporated with capital stock of $5,000, will begin the production of goods about October 20. Children's knitted waists and novelties will be manufactured from 16s and 20s yarns. Geo. Vincent has been elected president of the company; Henry Love, treasurer, and John C. Fogarty, superintendent. Ten knitting machines and 40 sewing machines will be installed. It is expected that about 60 hands will be employed.

New York, Richfield Springs. It is reported that M. A. Shauel will start a knit goods factory at this place. The plant formerly operated by the Richfield Springs Cap Company has been secured and is being remodelled preparatory to installing machinery.

*New York, Sidney. The complete equipment being installed by Julius Kayser & Company in the plant formerly operated by the Clark Textile Company, will consist of ten large knitting frames imported from Nottingham, England, and 150 sewing machines.

New York, Waverly. The Chemung Mitten Company has been incorporated with a capital stock of $5,000. Chas. A. Jayne of Waverly, N.

Y., Harry H. Jayne and Archie Wright of Berkshire, N. Y., are the incorporators.

*North Carolina, Burlington. Work will soon begin on the erection of a 40 by 80 foot building for the Sellars Hosiery Mills. This concern was recently organized with capital stock of $15,000 and will start operations with 40 knitting machines, manufacturing fine gauze hosiery. D. E. Sellars is manager.

*North Carolina, Burlington. Construction work started October 14 on a building for the Whitehead Hosiery Mills, Inc. It is expected that the building will be completed, 50 knitting machines installed, and manufacturing operations begun by November 20. Men's lisle and mercerized hosiery will be manufactured. J. W. Merry is president, S. M. Hornaday, treasurer, and R. H. Whitehead, secretary, manager and buyer. A steam power plant will be installed. The machinery equipment has been contracted for.

North Carolina, Carthage. The Bismark Hosiery Mills have been organized and will establish a plant for the manufacture of hosiery. A building has been secured and machinery will be installed at once. J. C. Newson is president and J. F. McArthur, secretary and treasurer.

*North Carolina, Flat Rock. The plant for the Skyland Hosiery Co., recently reported incorporated, is being erected and it is expected that part of the machinery will be in operation within two months. When operated in full, 500 hands will be employed on all grades of hosiery. J. F. Wilcox is president; H. E. Stilwell, treasurer; H. R. Rogers, superintendent; and F. S. Wilcox, general manager and buyer. The principal office of the company is located at Lynn, N. C.

*North Carolina, Zebulon. The Zebulon Hosiery Mills have completed the installation of machinery and manufacturing operations began early this month on 25 knitting machines. Plans are being made to add 75 additional machines about January 1.

Pennsylvania, Bernharts. On October 21 a charter for the Light Bros.' Hosiery Company will be applied for. The new company will be capitalized at $15,000 and will take over the hosiery business conducted under the firm name of Light Bros. & Company. The incorporators are R. B. Light, superintendent of the Light Bros. & Company; Chas. C. Miller and Winfred J. G. Light.

*Pennsylvania, Boiling Springs. The plant which we reported in August as being started by Frank T. McElroy of Steelton, Pa., has begun manufacturing men's hose. 42 knitters, 10 ribbers and 5 loopers have been installed. When running full capacity, the capacity will be about 300 dozens of hose daily.

*Pennsylvania, Elverson. The branch plant of the Hawk Knitting Co. (Reading, Pa.), has begun the manufacture of hosiery. When the plant is in full operation, 40 hands will be employed. W. D. Kehl is president; and W. H. Kehl, treasurer and superintendent.

*Pennsylvania, Jersey Shore. The Jersey Shore Knitting Mills, reported as being started by Thos. A. Delany, supt. of the Danville Knitting Mills Co., Danville, Pa., will start the manufacture of men's fine seamless half hose about November 11. A new building is being erected which will be completed November 1. 50 knitting machines will be installed immediately. Steam power will be used. Thos. A. Delany will be general manager and buyer; John Hushen, supt.

Pennsylvania, Philadelphia. Louis Engle & Bro. have recently installed machinery at 919 Commerce St. for the manufacture of sweaters, leggings and fancy knit goods for children and infants. They are operating at present two flat knitters and 25 sewing machines by electricity, and buy 2/22 wool, 3/20 and 4/20 worsted and 2/23 merino yarns. The production is sold direct.

Pennsylvania, Palmyra. Application has been made for a charter for the Palmyra Knitting Mills. The company will have a capital of $15,000. H. W. Blauch, D. S. Blauch and W. S. Poorman are the incorporators.

Pennsylvania, Plymouth. The Nottingham Knitting Mills are a new concern manufacturing men's cotton seamless half hose from 14s yarn. Eight knitting machines are operated by steam power. John Price is superintendent of the plant.

Pennsylvania, Reading. The Central Knitting Mills Company has been incorporated with a capital stock of $15,000. Lewis E. Muthard, Lewis E. Moyer, Benjamin E. Zerr and Philip H. Moyer are the incorporators.

Pennsylvania, Royersford. Edward J. Donnelly is starting a hosiery plant for the manufacture of fine half hose, a number of knitting machines being installed. Yarns will be bought.

Pennsylvania, Spring City. The Spring City Knitting Company, Gruber & Witt, proprietors, is a new concern which has recently started the manufacture of ladies' ribbed vests. Ivo W. Gruber is president and manager; John S. Witt is superintendent and treasurer. The capital stock is $10,000. Nine knitting machines are operated.

*South Carolina, Aiken. As the result of the efforts to secure a knitting mill, Mr. W. Scott Harvin, proprietor of the Manning Hosiery Mill, Manning, S. C., has been induced to consider the advisability of removing his plant to this place. A company will probably be formed with a capital stock of $100,000. The new building, if erected, will cost $25,000, and the equipment of the Manning Hosiery Mill installed. Mr. Harvin will be largely interested in the new company.

*Virginia, Radford. The Radford Knitting Mills, reported incorporated in September with a capital stock of $20,000, has purchased a building and is preparing to install knitting machinery. Electric power will be used. There is some talk of installing machinery for making cotton yarns at an early date. W. R. Jordan is president; J. M. Senner, vice president, and W. H. Galaway, secretary and treasurer.

Enlargements and Improvements.

*Georgia, Barnesville. The new bleachery erected for the Oxford Underwear Mills has been completed and is in operation with all the latest im-

provements for the bleaching and handling of knit fabrics.

*Georgia, Savannah. Machinery is being installed in the new knitting department of the Savannah Cotton Mills. In all 200 machines will be operated on children's cotton hosiery. It is expected that the new department will be in full operation about January 1.

*Illonios, Rockford. The Burson Knitting Company advise us that operations will begin in their new mill about December 1. A large part of the new machinery is in position. Full fashioned hosiery for women is manufactured.

*Massachusetts, Wakefield. The Harvard Knitting Mill has awarded contract for a tar and gravel roof to be put on the new addition. The new building will be used for storehouse only.

*Michigan, Middleville. Seven new knitting machines and 16 new sewing machines have been installed in the Thornapple Knitting Co.'s plant. This is a new concern which started up in October of last year manufacturing men's and boys' ribbed union suits. The company has capital stock of $125,000 and employs 75 hands. E. A. Clements is president and buyer; H. M. Leisveld, treasurer, and M. R. Rosenthal, superintendent. The product is sold through Robischon-Peckham Co., New York.

*New York, Cohoes. The Yale Textile Co. advises that the proposed branch at Renssalaer, N. Y., will not be built. Additional floor space has been secured in present location and it has been decided to install machinery here instad of operating a branch plant at Renssalaer.

North Carolina, Selma. The Selma Knitting Mills, manufacturers of men's and women's cotton hosiery will erect an addition to be used as a dye plant and will install machinery with a capacity of 500 dozens per day.

*North Carolina, Tarboro. The Wah Rhee Hosiery Company is considering the advisability of doubling its present machinery equipment. This company was incorporated in March with a capital stock of $40,000. It is controlled by the Runnymede Hosiery Mills.

*North Carolina, Winston-Salem. Construction work on the addition to the plant of P. H. Haynes Knitting Company has been completed and the machinery equipment will be set up and operated just as fast as it arrives. The new addition is a 4-story building, 105 by 80 feet. Electric power will be used.

*Ohio, New Richmond. Plans have been prepared for Dormer Bros. new knitting mill plant at this place. As reported the old plant was destroyed by fire. The new building will be fire proof construction, 60 by 90 feet and 4 stories high. The contractors have agreed to have the building ready for the installation of machinery within 60 days.

Pennsylvania, Pine Grove. Twenty latch needle knitting machines will be added to the equipment of the Pine Grove Manufacturing Co. Men's, women's and children's seamless hosiery are manufactured.

Pennsylvania, Philadelphia. The Reliable Mantle Manufacturing Co., manufacturers of incandescent gas mantles, with offices at 3203 Chestnut St., it is reported have recently contracted for the erection of a large building in Camden, N. J., in which they will install machinery for the manufacture of mantles on a larger scale.

*Tennessee, Johnson City. The Watauga Hosiery Mills, recently reported as purchasing the Unaka Knitting Mills, also of Johnson City, and making extensive improvements, including the addition of a dyehouse, has started operations with all the increased facilities completed. Thirty-five knitters, 20 ribbers and 12 loopers are operated on men's half hose and women's ribbed hosiery. The dye house is equipped for garment dyeing. Steam and electric power are used. L. Whitney Wood is pres. and buyer, and L. P. Wood is treas. and supt. The capital stock was recently increased from $10,000 to $20,000.

*Wisconsin, Janesville. The Lewis Knitting Company has found it necessary to lease a building near their present plant in order to get enough space to take care of their increased business. It is understood that additional knitting machinery will be installed. Men's, women's and children's full fashioned ribbed underwear is manufactured. This company recently increased its capital stock from $75,000 to $100,000.

Mills Shutting Down.

New Hampshire, Ashland. The Ashland Knitting Company has been shut down while extensive repairs are being made.

New York, Sherburne. The Canasawacta Knitting Mill has been shut down temporarily in order to make repairs.

Rhode Island, Thornton. The Fitch Mfg. Company has shut down temporarily.

Personals.

Frederick H. Knapp has accepted a position as overseer of knitting for the Oxford Knitting Mills, Barnesville, Ga.

Emanuel Spohr has accepted a position as overseer of knitting for J. K. Stewart & Sons, Amsterdam, N. Y. He was formerly employed for the Clayville Knitting Co., Clayville, N. Y.

Ernest J. Ancott, formerly superintendent of the Melborne Knitting Mills, Philadelphia, Pa., has been convicted by the courts of stealing machinery from the mills and also the theft of hosiery and yarns. He has been running a plant of his own for some time and the sentence has been deferred pending the disposition of the lawyers for a new trial.

Robert Kennedy, foreman of the finishing department in the knitting mills of Chas. Bailey & Son, Fort Plain, N. Y., has accepted a position at West Sand Lake, N. Y.

Richard Lohrman, formerly superintendent of the Marks Mfg. Company, Herkimer, N. Y., has succeeded D. M. Ranken, superintendent of the Genesee Underwear Company at Utica, N. Y.

J. H. De Myer has accepted a position as overseer of knitting for Jas. Bailey & Son at Fort Plain, N. Y.

New Machinery and Processes.

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to textile manufacturers. It is not a list of patents, but of improvements coming on the market. The idea being to present to our readers a systematic monthly record of new machinery etc., of interest to textile mill men.
We invite machine builders and others to send us such information for this department.

Braiding Machine. S. W. Wardwell, 99 Stewart Street, Providence, R. I. An improved braiding machine, which is described in another part of this issue. It marks an important advance in the manufacture of tubular braids.

Improved Cotton Baling Machine. John Shaw & Sons, Salford, England. A baling machine equipped with a weighing device, patented by Hutton & Himbury, officials of the British Cotton Growing Association. It is stated that this device ensures a fairly uniform weight for different bales. The canvas covering and hoops are cut exact lengths, ensuring uniformity in the tare. An account of this baling machine can be found in another part of this issue.

Weighting Silk. The Societa per la Stagionatura e l'Assagio delle Seta, Milan, Italy. A process for increasing the strength of tin weighted silk.

Damask Weaving without Cards. The Carver Looms, Ltd., Glasgow, Scotland, have produced an electrical attachment for looms which produces the pattern in the cloth by means of metallic plates instead of jacquard cards.

Wool Drying Machine. Fielden & Co., Rochdale, England. An improved wool drying machine in which the conveyers move in spiral form, an arrangement that is said to be meeting with much favor on account of economy of space as well as reduction in cost over the usual type of machine.

Finishing Machinery. Moritz Schramm, Greiz-Aubachtal, Germany. A machine for brushing woolen and half-wool goods. The work is done by vibrating blades, the improved construction dispensing with the use of gears. It is claimed that this gives a steady, noiseless motion and a better finish.

Fallers for Mules. Oscar Schimmel & Co., Chemnitz, Germany, are supplying a patent faller for their self-acting mules. The fallers are controlled by air pressure instead

of weights. Among the advantages claimed are more solid cops, increased production, saving of tubes and reduced breakage of yarn.

Paraffine Adjustment for Spoolers. Ernest Haehner, Apolda, Germany. An adjustment for spoolers by which the yarn is coated with paraffine for knitting or braiding purposes.

Cutter for Cloth Patterns. J. T. Hardaker, Bradford, England. An improved machine for cutting cloth patterns, which is said to require less power than formerly and to embody a number of novel features.

A BRAIDING MACHINE ON RADICALLY NEW PRINCIPLES.

A new braiding machine has recently been perfected which is here illustrated and described for the first time. It is the invention of Simon W. Wardwell and Edward F. Parks, the former well known as the originator of the universal system of winding, and certainly marks a most important and radical development in the manufacture of braid.

At the present time the machines used for tubular braid are operated on the same principle as was in use a century ago, being a duplication of the maypole dance. One has but to watch the slow, tortuous operation of the old style braider to be impressed with the crudeness of the mechanism and difficulties of operation as compared with the actual work accomplished.

FIG. 1. THE NEW WARDWELL BRAIDING MACHINE.

In the new braider the method of operation has been simplified, and the mechanism improved to such an extent that already the

speed and production of the machine are five times greater than obtained with the old one, while the tension is much more closely regulated. The value of the latter feature is demonstrated in covering wire, it having been proved that this work can be done on the new machine with ten per cent. less yarn than on the old style of braider.

One of the new machines at the works of the Universal Winding Co., 99 Stewart Street, Providence, R. I., has been operating continuously for several months covering wire, and the minimum production made in this test was 65 inches a minute against 12 inches on the ordinary machine. The machine is now on exhibition operating on the same material and producing 72 inches a minute, and it is claimed that the future machines will be capable of producing 100 inches a minute.

The new braider, as shown in Fig. 1, is designed on a principle radically different from that of the old style machine, the important distinction being that, in the present invention, instead of radically reciprocating the supply carriers and their relatively heavy masses of yarn, only the yarns themselves are deflected to follow their path of travel about the axis of the machine. In other words, the supply carriers with their cops or spools, instead of pursuing sinuous orbits to pass each other, are simply revolved in opposite directions about a common axis.

The spools of yarns are arranged in two tiers, one above the other, the yarns from the upper tier leading directly to the braiding point and the yarns from the lower traveling in and out among the upper carriers. The upper carriers travel on a circular track, which is divided into sections, between which are openings to admit the lower yarns being deflected radially in and out to pass them by the carriers. These upper carriers are of skeleton structure, having a rim of lenticular contour with pointed ends acting with a wedging tendency on the yarns to deflect their course over or under the cops of the upper supplies. The upper carriers are connected to their driving head by oscillating, arc-shaped drivers controlled

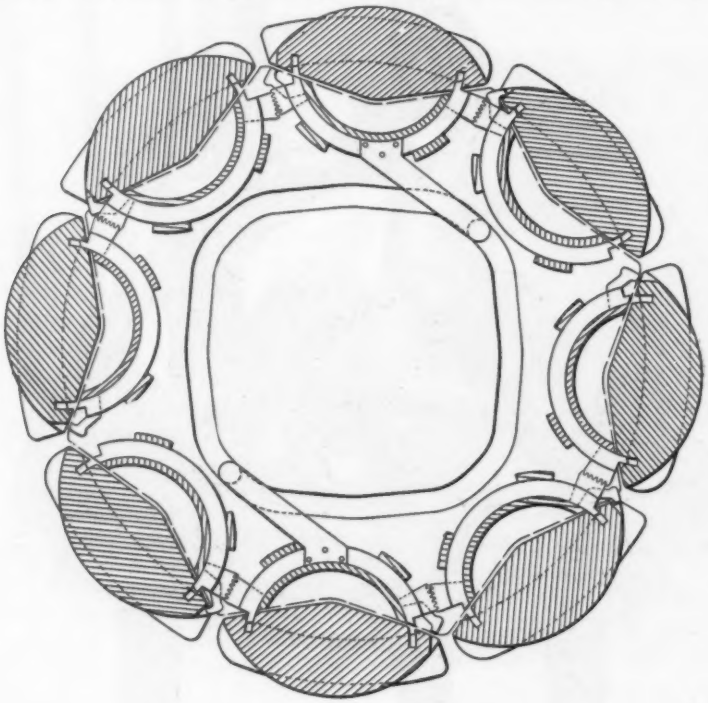


FIG. 2.

by a cam to engage the carrier first by one and then by the other to provide for a constant engagement, while allowing the lower yarn to pass by the engaging points. The form and arrangement of these drivers provide for their engagement in a direction perpendicular to the path of revolution of the carrier, thus effecting a firm, snug fit similar to a bolt action and eliminating all play and backlash. The lower spools are simply carried on spindles supported by a rotating head or drum and provided with adjustable tension and let-off devices. The plan of the machine, shown in Fig. 2, will aid in understanding the method by which the threads from the lower tier are passed alternately in and outside of the upper spools.

The machine is especially adapted for the use of cops wound by the Wardwell or Universal system of winding. While it is capable of employing the ordinary bobbin, by the use of the system referred to it is possible to carry five times the amount of yarn usually carried.

The path of the yarn from the lower tier of spools is determined by the action of switches, which are formed as part of the drivers and oscillated from the cam before mentioned. By simply changing this cam the machine can be adapted to produce either plain or basket braid without reducing its capacity. In other words, the full number of carriers are used in either case, which is not possible in the ordinary machine which requires that half the number of carriers must be removed to produce basket braid. The switches are small, light, crescent-shaped pieces which vibrate back and forth in front of the leading ends of the upper carriers to close and open alternately the passages between the carriers and their driving head. Having but a small extent of movement and being relatively light, they are capable of a high speed of operation.

The drivers and switches are connected in groups operated by two followers of the cam groove, this arrangement reducing the number of operating parts and thereby minimizing friction and wear. There are no vibrating or hammer-like guides in the present machine, the whole operation of diverting the course of the yarns being performed by the switches acting in conjunction with the pointed nose-ends of the carriers.

In Fig. 1 the machine is shown equipped with the Wardwell patent take-up device which winds the braid in cross-wound, self-sustaining packages capable of containing a large amount of material in a small space, and providing an economical commercial package produced on the machine itself, thus doing away with rewinding.

The machine here shown has sixteen carriers, but the principle involved is applicable to machines having any number of carriers. Besides producing braid for ordinary uses, such as shoe strings, corset lacing, lamp wicking, etc., the machine is also especially adapted for covering flexible tubing and for covering wire for insulation purposes.

A striking feature of the invention is its extreme simplicity and almost frictionless operation. The practical elimination of the elements of friction, inertia and momentum, through the simplification of the method of operation and the refinement of the mechanism, is evident from the high speed attained.

Another important advantage of the new braider described results from reducing the rubbing contact of the yarn to a minimum. In the old style machine each bobbin must render three inches of yarn as the carriers pass by each other. After the carriers pass, this length of yarn is taken up by a suspended weight on the take-up device, the yarn being arranged to pass through a guide and under the weight which slides up and down. It will be seen that, as the yarn passes through a guide-eye and loops around the weight, it rubs and chafes through a distance of three inches at each point.

In the new machine only half of the whole number of threads are deflected from their straight course to pass them by the upper supplies, and in these the deflection is so slight that only a quarter of an inch of yarn is required to be delivered from the cops. The take-up device has only one guide-eye, so that there is only one contact point for the yarn, and its play in this eye is only a quarter of an inch. The tension of the yarns is controlled so delicately that it has been found possible to braid yarns as fine as 100s

cotton at the maximum speed without breakage.

The commercial manufacture of the new machine has not yet begun, but parties interested may obtain further particulars by applying to S. W. Wardwell or E. F. Parks, 99 Stewart Street, Providence, R. I.

The new machine is protected by fundamental patents in the United States and principal foreign countries.

A PNEUMATIC CLOTH FINISHING MACHINE.

Finishers of woolen and worsted goods, such as kerseys, meltons, broadcloths, friezes, felts and similar fabrics, will be interested in the new pneumatic finishing machine which is being sold by Schuchardt & Schuette, 136 Liberty Street, New York. Although comparatively new to American manufacturers, this machine has been used with great success on the Continent of Europe for a number of years. It facilitates the difficult process of finishing wool goods and enables a much finer face to be obtained.

The cloth is drawn over a number of rolls covered with finely ground glass. The pressure is applied by a pneumatic device, which enables the energy of the machine to be regulated very closely. The millions of small glass crystals act on the thread in a manner that cannot be otherwise duplicated, and the result is a uniform, smooth, polished surface with a very thick nap. This result is attained without danger of injury to the thread. Finishers of these goods are familiar with the great danger of making the goods tender by too much work on the old machines. Very often they find it impossible to obtain the desired finish without impairing the strength of the goods. In such cases the pneumatic finishing machine will be found of especial value as the nap and lustre can be produced with a minimum effect on the strength of the yarn.

While the special method of handling depends on the structure of the fabric and the finish desired the machine is used for both wet and dry finishing. The ground glass surface is impervious to water and steam, consequently its condition is not affected by handling goods in the wet state. Manufacturers interested in this finishing machine can get further information and references to prominent mills in this country using the machine on application to Schuchardt & Schuette.

In addition to the pneumatic finishing machine this firm sells machines for cloth steaming, sponging machines, cloth gumming machines, driers, and cloth brushing machines.

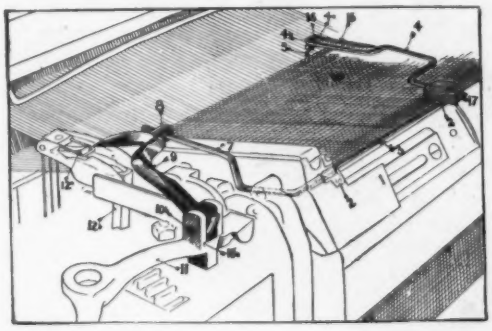
AUTOMATIC THIN PLACE PREVENTER FOR LOOMS.

The illustration shows an automatic thin place preventer which is attached to an iron breast beam loom. After rigid tests for practicability, the device was placed on the market in January, 1907, by the Clayton & Bentley Company, Prudential Bldg., Atlanta, Ga., who are also the manufacturers. At present more than thirty cotton mills have looms equipped with the device, three of the largest having 5,550 preventers installed.

The use of automatic bobbin and shuttle changing looms, the use of warp stop motions on these looms, and the dozen other visible forms of the progressive idea which stands for trusting more to the machine and less to the man or woman have made more pressing the need of a successful thin place preventer. The transition from six looms in a set to thirty looms or more, and from three or four looms on fine grades to twelve or fifteen, means that each loom gets approximately one-fifth the attention necessary in former days. It is impossible for the weaver to watch every inch of cloth as it is being woven. Indeed, yards of cloth are sometimes made in the time between one visit to a loom and the next. It is to insure the quality of cloth woven while the weaver is attending to other looms that the automatic thin place preventer is attached. Its operation is as follows:

A detector rod is mounted on the front of the breast beam. An arm extends toward the reed from one end of this rod and is provided at its free end with a lever which is pivotally secured. A finger extends from the lever and rests on the cloth at a point

about two picks from the fell of cloth, or the last pick of filling which has been beaten up. At the other end of the detector rod is another arm which is connected to a latch bar, which in turn is connected to the knock-off lever or shipper of the loom. As the cloth is taken up, the finger is supported, always at a point about two picks from the fell. Should the filling break or a thin or open place be made in any way, the finger will drop and, through the connection of the rod, the latch bar will drop into the path of the elbow lever of the stop motion, and stop the loom. To start the loom again, simply raise the finger, let back a few teeth on the take-up, and pull on the lever.



A more simple device could scarcely be made for any purpose. To provide against the cloth being torn, the finger is controlled by a spring which allows it to swing out of engagement with the cloth.

The equipment of looms with Clayton & Bentley thin place preventer increases the cost about two per cent. and being guaranteed by the manufacturers to detect and prevent thin places is claimed to pay for itself within a short time. As there is practically no wear on the device it should last for years with proper attention.

This preventer is also made for wooden breast beam looms.

Prominent among the mills using the preventer on automatic iron breast beam looms are the Pelzer Manfg. Co., Pelzer, S. C., which have 2,682 looms equipped. The John P. King Manfg. Co., Augusta, Ga., have 1,600 looms equipped. Monaghan Mills, Greenville, S. C., have 1,260 looms equipped. Also Belton Mills, Belton, S. C., Orr Cotton Mills, Anderson, S. C., Olympia Cotton Mills, Columbia, S. C., Spartan Mills, Spartanburg, S. C., Whitney Manfg. Co., Whitney, S. C., Victor Manfg. Co., Greers, S. C., Pacolet Manfg. Co., New Holland, Ga., Exposition Cotton Mills, Atlanta, Ga., Columbus Manfg. Co., Columbus, Ga., Mass. Mills in Georgia, Lindale, Ga., Dwight Manfg. Co., Alabama City, Ala., Jackson Fiber Co., Bemis, Tenn., Brookside Mills, Knoxville, Tenn.

It will be noted that these are all Southern mills. The company have been so busy taking care of the orders near at hand, that they have never had salesmen in the East. In response to numerous inquiries they are now sending salesmen into that territory. They state that they will be glad to apply samples without charge, demonstrate the working of the device, let the mills make test runs, comparing the results obtained as compared with looms not equipped with the device, and await the verdict of the mills with absolute confidence as to the outcome.

A DECATIZING MACHINE FOR FACE GOODS.

Among the other specialties in German textile machinery being placed on the American market by L. H. A. Schwartz & Co., 141 Milk St., Boston, is a shrinking and decatizing apparatus, designed to give a permanent luster on all kinds of goods such as broadcloths, worsteds, cheviots, vicunas, beavers, etc.

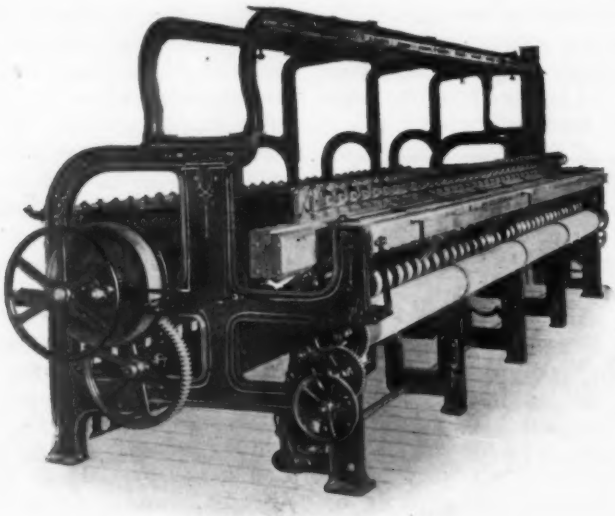
By the use of air cooling and vacuum pumps a hot air vacuum is created through the cloth before decatizing, thus avoiding any condensation of steam inside the cloth. The decatizing effect may be regulated at will, this depending on the duration of the pumping. The cloth may also be decatized by a vacuum, which is of the greatest importance with delicate colors which require quick handling. By use of the pumping apparatus after decatizing many cloths need not be washed and tentered again. The decatized goods acquire a soft, woolly handle and high, uniform luster.

Among the claims made for this machine are high luster, economy of steam, saving of colors, no water marks, no burnt goods, no flecking or bleeding of colors ease in handling, solid construction and low price.

NEW NARROW FABRIC LOOM.

For the past six months Kilburn, Lincoln & Co. have been engaged in extending their well-known line of weaving machinery to cover a much broader field. Because of the growing demand by manufacturers for a greater variety of weaving appliances the management decided that all looms built in the future should embrace the necessary features essential to fancy weaving and in consequence four new models of cotton looms have been completed. Patten's improved dobby has been developed; also multipliers and two weave motions.

Further progress has been made in the way of bringing out narrow fabric and silk ribbon looms, which enable this enterprising company to supply weaving equipments for the manufacture of all fabrics of cotton and silk texture. The accompanying cut represents the latest loom for weaving tapes and elastic webbings. Alonzo R. Patten, who has recently become associated with Kilburn, Lincoln & Co., is giving his whole attention to the new work and his long experience in connection with the excellent organization of the company has accomplished very satisfactory results.



KILBURN, LINCOLN & CO.'S NARROW FABRIC LOOM.

A LOW TURBINE RECORD FOR STEAM CONSUMPTION.

The rapidity with which the steam turbine has come into popular favor is one of the phenomena of modern steam engineering. It is less than a decade ago since the first turbine was sold in the American market, but there are today about 700 in use throughout the country, aggregating a total capacity of approximately 1,000,000 kilowatts or about 1,500,000 horse power. This wonderful demand for that novel prime mover is, of course, easily explained by the many advantages the turbine has over the reciprocating steam engine.

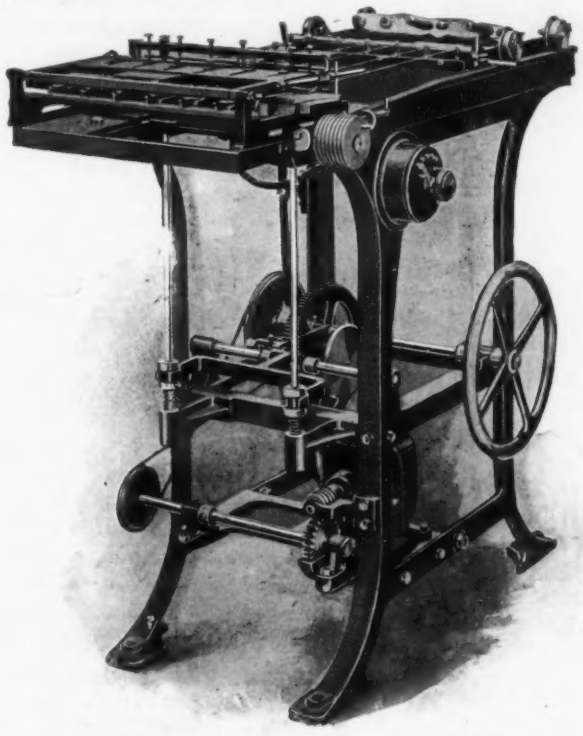
An interesting test was conducted recently by the engineers of the New York Edison Company at the Waterside Station near 30th Street, which developed facts hitherto unattained by any steam prime mover in this country. The unit under test was a Westinghouse turbine of 10,000 horse power capacity. It had been sold under a steam consumption guarantee of 15.9 pounds of steam per kilowatt hour, but the test recorded the phenomenally low steam consumption of a shade less than 14.9 pounds per kilowatt hour.

Apart from the fact that this result gained a bonus for the Westinghouse turbine of over $25,000, it is of the utmost interest to all users of steam engines as an illustration of the lowest record for steam consumption which has ever been recorded by a stationary steam engine. This steam consumption figures less than 1 1/2 pounds of coal per kilowatt hour and graphically illustrates the great advance in modern power plant practice attained through the introduction of the steam turbine efficiency of which has been demonstrated in all respects to be superior to the reciprocating engines as to practically supplant them altogether.

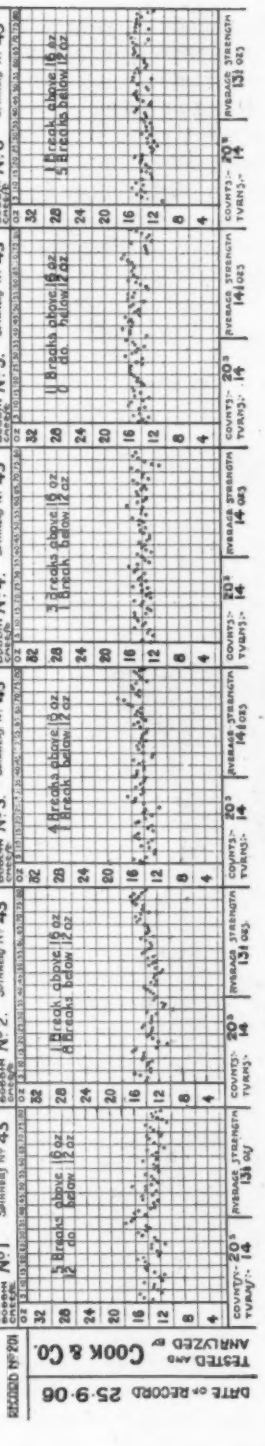
A MACHINE FOR AUTOMATICALLY TESTING AND RECORDING THE STRENGTH OF YARN.

Some months ago we had an opportunity to examine the very ingenious single thread testing machine built by Cook & Co. under the Moscrop patent. It possesses the important advantage of testing the strength of the single strands of yarn, which enables a manager to discover the actual conditions of any frame or any division of a frame and trace the defect at once.

Yarn spinners know from experience that the common method in vogue of skein testing gives but little information as to the individual yarns composing the skein, while the single thread testing machines hitherto in use depend largely for their accuracy on the way in which they are manipulated by the operator. The trouble that weak threads in the warp can give the weaver is gauged by the spots of greatest weakness. It makes little difference if some of the warp is strong; the weak places will break just the same. A skein made of uneven yarn may show a very satisfactory average due entirely to the strength of certain portions. This strength, however, is of very little practical advantage in the processes in which the yarn is used. The manufacturer is really and properly interested in the strength of the weakest yarn and that can be found only by individual strand tests.



THREAD TESTING AND RECORDING MACHINE.


RECORD No 201
DATE OF RECORD 25.9.06
TESTED AND ANALYZED BY Cook & Co.
Spinning No 43
Spinning No 43
Spinning No 43
Spinning No 43
Spinning No 43
Spinning No 43
COP BOBBIN No 1.
COP BOBBIN No 2.
COP BOBBIN No 3.
COP BOBBIN No 4.
COP BOBBIN No 5.
COP BOBBIN No 6.
5 Breaks above 16 oz. 2 do. below 12 oz.
1 Break above 16 oz. 1 Breaks below 12 oz.
4 Breaks above 16 oz. 1 Break below 12 oz.
3 Breaks above 16 oz. 1 Break below 12 oz.
1 Breaks above 16 oz. 0 Breaks below 12 oz.
1 Breaks above 16 oz. 5 Breaks below 12 oz.
AVERAGE STRENGTH 13 1/2 OZS
AVERAGE STRENGTH 14 OZS
AVERAGE STRENGTH 14 1/2 OZS
AVERAGE STRENGTH 13 OZS
COUNT 20s TWIST 14
COUNT 20s TWIST 14

REPRINT OF A RECORDED TEST.

The Draper Co., which has always been interested in testing the strength of yarns, has arranged with the Cook Company to introduce this tester on the market and is now offering it to the American trade. This new automatic machine takes six bobbins or cops of yarn at one time, automatically seizes the yarn ends, winds off a certain length, and then breaks it through the spring pull, the breaking strength being registered on diagram paper, and the tested yarn is then cleared from the nips so as not to foul the next operation. The representation of the record shows a test of six cops of 20s mule spun yarn made with Egyptian cotton. The machine has registered 80 single thread breaks from a cop, and the strength of each break has been recorded by means of a perforation in the paper. It will be seen that out of the whole 480 breaks there are only 25 above 16 ounces, and 27 below 12 ounces, the yarn really showing great uniformity. The twist in the yarn tested was 14 turns per inch. The skein tests showed a breaking strength of 95 pounds.

As the accuracy of the tests depends on the tension of the springs, it is evident that sufficient accuracy in the manufacture of the springs is required. This is a matter of common practice as all spring balances are equally dependent on their mechanical structure. A spring will remain good almost indefinitely if not sprung beyond a certain percentage of its capacity. These springs are only used under a working strain equal to 50 per cent. of their guaranteed amount of elongation before straining. The springs may at any time be verified by actual weights, using a simple apparatus, by which a weight is hung over a sliding pulley to apply a known pull. If inaccuracy is detected it is readily remedied by a set screw adjustment, though when once set there is little or no variation afterward.

The exports to the United States from Madras for the fiscal year of 1905-6 amounted to $4,226,763; the imports from the United States for the same period were valued at $310,239. Not a single American is engaged in trade in that city.

Dyeing, Bleaching, Printing, Etc.

FIREPROOFING OF TEXTILES.

BY BETA NAPHTHOL.

Textile fabrics cannot be rendered fireproof without leaving the fireproofing composition on the fibres; although many attempts have been made to change the nature of the fibre substances, and leave it non-combustible, all efforts have been in vain. The best that can be done is to treat the fabrics with some substance which of itself is non-inflammable, and which protects the fibre substance in such a manner that it will not burst into flame when fire is near.

The following formula for a fireproofing compound for textiles has been found to prevent the fabric from bursting into flames when a treated and dried piece of lace curtain material was suspended over an alcohol lamp; the only result was that the fabric became charred and disintegrated.

No. 1.

Sulphate of ammonia	8 lbs.
Borax	2 lbs.
Boric acid	3 lbs.
Carbonate of ammonia	2 lbs.
Dextrine	5 ozs.
Water	to make 15 gals.

The material to be "proofed" is simply immersed in the solution until thoroughly saturated, then squeezed and dried. This quantity of solution is sufficient to treat 100 pounds of textiles.

Another, though similar, solution is prepared as follows:

No. 2.

Sulphate of ammonia	15 lbs.
Borax	3 lbs.
Boric acid	3 lbs.
Water	to make 15 gals.

The material is simply immersed until saturated, then lifted, squeezed and dried.

A starch for sizing purposes may be made according to the following formula, and the starch may be replaced by either flour, sago, dextrine, or other similar substance.

Starch	55 lbs.
Tungstate of soda	27½ lbs.
Borax	17½ lbs.
	100 lbs.

For use, this compound is made into starch or size of proper consistency, and applied to yarns or fabrics in the usual manner, and dried.

Of course, no fireproofing compound that can be applied to textiles can be permanent, because after once washing, they will be removed, and must be replaced by fresh applications.

These solutions, properly applied to timber for mill construction, will retard inflammation in exactly the same manner as for fabrics.

DYEING JUTE YARN.

Preliminary treatment of jute is simple enough. It suffices to scour it well with boiling water, with the addition of a little washing soda, rinsing afterwards thoroughly. The jute is never bleached before dyeing unless it is absolutely necessary. When, however, bleaching is required, the use of bleaching powder should be avoided whenever possible as jute fibre is especially liable to tender under its action. Sodium hypochlorite, although dearer, should always be preferred. When bleaching powder is used, the bath should not be above 1/2° B. in strength, or more than lukewarm, and the jute should not remain in the bath more than one hour. After lifting rinse, sour, and rinse again. The bleach obtained in this way is insufficient for dyeing light shades subsequently. The Cross and Brown process with hydrogen peroxide and permanganate, followed of course by a bisulphite bath, is then preferable.

Every dye applicable to cotton can be used on jute, and the results as regards fastness are about the same. The chief point special to jute is that more attention must be paid to the character of the water used. Jute is

very liable to become hard and brittle in hard water dye baths, so that the hardness must be corrected with a little hydrochloric or acetic acid, of which, however, no more should be used than necessary to correct the known hardness.

The dyes which give the best penetration with jute are the acid dyes. Although the dyeings with them are not very fast to washing, they stand light and wear extremely well. As jute is very sensitive to mineral acids, which tender it much and quickly, it is advisable to replace sulphuric by formic acid in the dye bath, using Glauber's salt or alum as an assistant. Inasmuch as jute contains tannins, basic dyes can be used on it without a mordant. The dyeings so obtained are however quite different from those with the acid dyes spoken of above. They are fast to washing, but loose to wear and light. Jute dyeing with basic dyes requires great care to secure level shades. The goods must be entered cold, the final temperature must never exceed about 150° F., and the dyeing process must be conducted as slowly as possible. Another point and one nearly of equal importance is that the dye must be added to the bath in several separate portions.

The best dyes for jute are the substantive dyes. This is another proof of the difference between jute and most of the other vegetable fibres. On jute these dyes, as a class, give colors satisfactorily fast to washing and wear, and nearly as fast to light as the dyeings on cotton. They equalize extremely well, and if the water has been corrected, as above directed, they do not impair the soft feel of the goods. They do not exhaust well, and standing baths are therefore a necessity. The first lot of goods is entered at the boil into the bath prepared with the necessary amount of dye, 20 per cent. of Glauber's salt and 1 per cent. for soda ash. Boil half an hour, shut off the steam, and work for from half to a whole hour longer in the cooling bath. The substantive dyeings can be topped with basic dyes if necessary in the same or in a second bath.

Jute is dyed with sulphur dyes exactly like cotton, and light shades with these dyes come out better on jute than on cotton.—The Dyer and Calico Printer.

VENTILATING DYE HOUSES.

A method of ventilating dye houses and bleacheries is the subject of a recent patent in this country, and is described by the patentee as follows:

In dye houses and bleacheries, as usually constructed, great difficulty has been experienced in properly ventilating them in cold weather when the rising vapors are condensed into a dense fog. Because of these conditions it is almost, if not quite impossible, to maintain the efficiency of labor con-

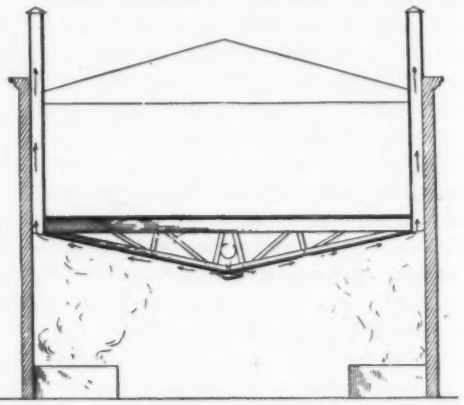


FIG. 1.

ditions or secure even a fair working condition. This condensation of steam or vapor renders the atmosphere damp in cold weather, and the accumulations of damaging gases in bleacheries from the want of ventilation in cold weather, introduce conditions very detrimental to the workmen.

The object of this invention is to overcome these objections by causing all vapors and gases to be carried away as soon as they rise, keeping the dye house or bleachery clear at all times and under all variations of temperature.

The dye house is built with a ceiling having one or more inclined surfaces communicating at their highest portions with chimneys extending sufficiently high to carry away the steam or mist. There is a hollow compartment above the ceiling through which air is circulated and from which it escapes through openings adjacent to the lower part of the inclined ceiling; the air in rising along the

under surface of the ceiling carries with it the ascending vapors and gases and conveys them to the ventilating chimneys.

Fig. 1 is a cross section on line 1—1 of Fig. 2 of the dye house or bleachery and shows the new construction; and Fig. 2 is a longitudinal section on line 2—2 of Fig. 1.

The dyeing or bleaching room is provided with inclined ceilings, which communicate at their highest portions with ventilating flues, of which there may be any desired number. The lower portion of the ceilings receives a supply of warm or relatively dry air by an opening, which extends the length of the ceiling. Guards are arranged below the opening to deflect the air passing through the opening upward along the inclined ceilings.

One or more floors are arranged in the building above the chamber and above the ceiling and the chamber may inclose trussed girders.

The air passing into the chamber for distribution to the ceilings is admitted direct from outside of the building by a controlled inlet and pipe, or it may be forced in by a blower and heated or otherwise prepared by passing through a chamber, as desired. In this manner the ascending vapors and steam from the vats meet warm and relatively dry layers of air adjacent to the ceilings and are carried along and up the chimneys or ventilating flues out of the building. It will thus be seen that the steam and vapors are not permitted to remain in the room, nor are they allowed to come in contact with a cold ceiling as heretofore. There is, therefore, no condensation within the room and the atmosphere is comparatively free from vapors, steam and gases, such as are commonly found in dye houses and bleacheries during cold weather.

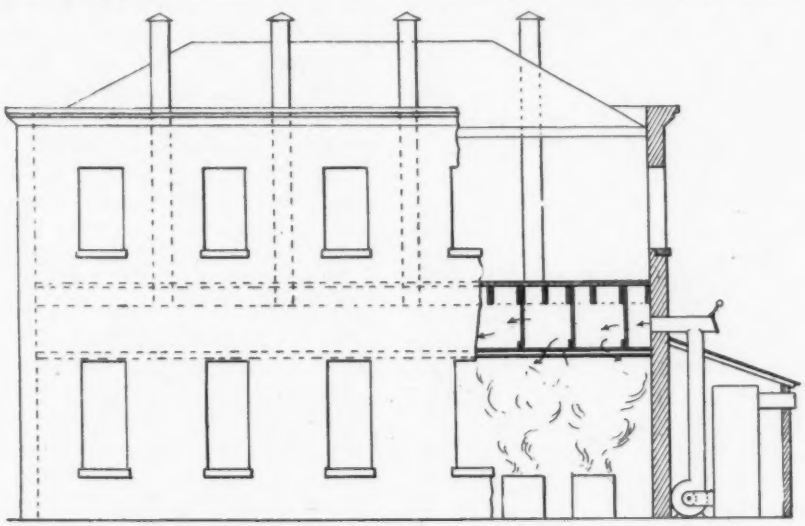


FIG. 2.

TURKEY RED OIL.

The use of Turkey-red oil is one of the commonplaces of the dyer's art. Theoretically it is made from castor oil, and consists of a compound in which a sulphonic group replaces the hydroxyl of the ricinoleic acid. For reasons not absolutely unconnected with economic considerations, however, cheaper oils, especially cotton seed oil, are often substituted for the medicinal oil above mentioned. At all events, whatever the oil selected as a raw material may be, it is treated with oil of vitriol, at a low temperature, so as to prevent charring and the consequent production of a dark color, and the resulting oil is the sulphonate of the original fatty acid, what this is depending, of course, upon the oil selected for treatment. Turkey-red

oil is, then, sulphonated fatty acid varying in its character according to the oil which serves as a raw material. It is used either as such or combined with an alkali in the form of a soap. Its classical use is, of course, as an assistant for alizarine in red-dyeing, but it is also employed on cotton for many basic dyes, for preparing calico for certain printing purposes, and in cotton-finishing.

Hitherto there have been difficulties in the use of the Turkey-red oil, whatever the original oil which has been sulphonated may have been, but the most important of these seems now to have been overcome, viz., the waste incurred when the fairly expensive product is used with hard water, which throws down the fatty acid in insoluble lime-compounds, which are of no use to the textile manufacturer, exactly as it does with ordinary washing soaps. In the case of ordinary soaps, a partial remedy for this inconvenience has been discovered in "superfatting," as it is called. In a superfatted soap, unsaponified fat is mixed with the soap itself, i. e., with the saponified fat, in a proportion corresponding to the normal hardness, and bears the brunt of the onslaught of the hard water, which acts on it first in preference to the saponified fat. Thus the chemical affinities of the hard water are satisfied and the action of the soap is unaffected. Dr. Schmitz, under English patents, 8,245 and 11,903, both of 1907, has, it seems, successfully applied this principle to Turkey-red oil, and Turkey-red oil soap. Dr. Schmitz first sulphonates the oil, whatever it may be, with sulphuric acid in the usual way. He then reverses the process by prolonged boiling with or without the addition of water, mixes the product with more of the original oil, and sulphonates again. The product thus obtained is said not to precipitate with hard water. Dr. Schmitz is of opinion that the superfatting oil holds in solution the lime soap produced by the contact of the Turkey-red oil proper with the hard water. The second specification is concerned merely with a subsequent discovery that it is unnecessary to heat up after superfatting and before the second sulphonation. There is no harm in saying that the specifications are difficult to be understood by the people, probably because they have been drawn up so as to include most things in the way of oils and fats and in the way of methods.—The Dyer and Calico Printer.

MERCERIZED EFFECT THREADS.

It is difficult to dye effect threads of mercerized cotton in such a way that they will stand the acid dyeing of the wool. In spite of the enormous number of dyes which are at the disposal of the dyer, there are few which answer to this requirement. The effect threads often have to show brightly on a dark background, whereby the inherent difficulties are much increased. The best dyes for the purpose, so far as fastness is concerned, are the sulphur dyes, but they are wanting in liveliness. The same difficulty attaches itself to the use of substantive dyes or an after-treatment in chrome or copper.

The following directions will be found to give perfectly satisfactory results provided that the fabric has been dyed with dyes that go on the wool and leave the cotton uncolored; an instructive example is afforded by a case recently under the notice of the writer. Effect threads dyed with two shades of blue and one of pink, had been woven into a woolen fabric subsequently dyed to a dark brown. After the piece dyeing, the pink had disappeared and one of the blues, while the other had changed to olive. Here, evidently, the fault was in dyeing the wool with dyes having an affinity for mercerized cotton as well as for wool.

With modern mercerizing machinery and processes there should be no difficulty in obtaining good results if the goods have been first bleached in the case of light dyeings.

All the following directions refer to 100 lbs. of goods in each case.

For light blue, mordant with 1 lb. of tannin and 1/2 lb. of tartar-emetic and dye in a bath prepared with half a gallon of formic acid, and cold at first with from one to two ounces of Methylene Blue BB, added in five separate portions. When all the dye has been added, heat the bath slightly, and add about two ounces of Victoria Blue R in two lots. Then return the goods to the mordant

bath, previously reinforced with half the original quantities of tannin and tartar emetic. Then soap at the boil and rinse. The object of adding the Victoria Blue is to increase the fastness of the cheaper dye.

To dye a cornflower blue on yarn, steep it overnight in a solution of 4 lbs. of tannin, fixing next morning with a tartar-emetic bath containing 2 lbs. of the antimony salt. Dye in a bath prepared with about 3/4 lb. of Victoria Blue and some formic acid. Return to the tannin bath, reinforced as directed above, soap at the boil and rinse and dry.

A steel green is somewhat more difficult, as all the bluish green dyes at present on the market stand a boiling bath rather badly. But with Victoria Blue and Capri Green GG the desired result is obtained with careful working. After a very dilute tannin bath, dye with Victoria Blue R. Then mordant dyed goods in about 6 lbs. of tannin and 2 lbs. of tartar-emetic, dye with the Capri Green, return to the mordant bath, and then rinse and dry.

In dyeing yellowish greens, the chief point is to fix the yellow dye well. Auramine O and Acridine Yellow II are unsatisfactory, but Thioflavine T answers well. Mordant with 8 lbs. of tannin and 3 lbs. of tartar-emetic and dye with 2/5 lb. of Thioflavine T and about 1 1/2 lbs. of Capri Green GG. Then return as above to the old mordant bath, rinse and dry.

For yellow use Primuline with a light after-treatment with bleaching powder, followed by thorough soaping and rinsing. A nice bright yellow drab is obtained from the following recipe. Prepare a cold dye bath with 1 lb. of Primuline alone. After a short working in this bath, heat to about 60°. Then repeat the bleach bath, return the goods to the Primuline bath previously additioned with 1/4 lb. more of the dye. Finally, diazotize and develop with resorcin, soap hot, rinse and dry.

These directions will show the experienced dyer how to proceed with other colors, but it is necessary to say that in dyeing light shades, i. e., in the use of weak baths, there is a certain amount of risk of unlevel dyeing, which can only be avoided by the exercise of great care in the diazotizing and developing. These effect threads are very fashionable at present, more so now than the white effects. It is important, therefore, to be able to produce them in variety.—The Textil und Farberei-Zeitung.

SULPHUR DYES.

A process for dyeing with the sulphur dyes has recently been patented by the Badische Anilin und Soda Fabrik, the process being described as follows in the Journal of the Society of Dyers and Colorists:

The so-called sulphur coloring matters have hitherto usually been dyed by treating the fiber with a solution of the dye in sodium sulphide solution to which sodium carbonate and common salt have been added; the vats employed, however, are very sensitive to the action of air and of high temperature and the shades obtained are very often uneven. It has also been proposed to use these dyes from an alkaline hydrosulphite vat, but this process has not come into general use, because it is expensive and because the presence of so strong a reducing agent in the vat is very liable to cause unsatisfactory results. The inventors of the new process have discovered that mixtures of sulphur coloring matter with fermentable matter possess valuable properties since, on treatment with water in the presence of alkali, they yield a vat which can be used directly for dyeing purposes. The mixture can be made in the dry condition, or in the condition of a paste. When made in a dry condition, the alkaline reacting substance may, or may not, be added to the mixture. In the case of a paste, it is advisable to add the alkaline reacting substance to the paste, otherwise it will not keep in good condition. When such a mixture is stirred into a suitable quantity of water, the sulphur coloring matter is reduced to its leuco condition by means of the hydrogen evolved during the fermentation. The process is generally more suitable for vegetable, than for animal fibers.

Example 1.—Mix together, to form a homogeneous paste, 200 parts of Kryogene Black TBO, 50 parts of finely ground wheat-bran, 50 parts of potato flour, 50 parts of calcined soda, and 50 parts of sugar syrup. If

desired the mixture can be subsequently pressed into cakes.

Example 2.—Mix together 400 parts of cold water, 1 part of Kyrogene Black TBO, 3 parts of wheat flour, or potato flour, 2 parts of bran, 1 part of syrup, or molasses, and 1 part of calcined soda. After a time the coloring matter begins to go into solution and the color of the bath changes from grey to green and a froth forms which is at first bluish and soon turns black. The bath is maintained weakly alkaline by the addition of sodium carbonate, and dyeing operations should commence when the bath is clear and dark green in color. The bath can be strengthened, or prepared, for fresh dyeing operations, by the subsequent addition of coloring matter and bran, or flour, or syrup.

A similar procedure can be employed when dyeing with other dyes, such, for instance, as Sulphur Black T and Immedial Black NNG, although some are better suited for the purposes of the invention than others. Instead of sodium carbonate, other alkaline salts, or caustic alkali, can be employed, caustic alkali being preferable for instance when dyeing with Thiophenol Black T extra.

Example 3.—Mix together 400 parts of cold water, 1 part of Kyrogene Direct Blue G, 1/4 part of woad, 2 parts of wheat bran, 1 part of syrup, and 1/3 part of 35 per cent. caustic soda. Maintain the vat weakly alkaline during the fermentation by means of caustic soda, or sodium carbonate. During the fermentation the vat turns yellow and a blue flurry forms.

EXAMINATION OF COMMERCIAL STARCHES.

The usual method of comparing starches by boiling equal weights of the samples with equal volumes of water, and, after cooling, grading the resulting pastes according to the stiffness as determined by the sense of touch, is not very reliable. Measurements of the viscosity of weaker starch solutions may also be used, and it has been found that the most regular results are obtained by pouring the starch, suspended in 25 parts of cold water, into 225 parts of boiling water, after which it should be brought to the boil and boiled for one minute, the solution being allowed to stand overnight in a stoppered bottle.

Owing to the variable viscosity of the solutions made in this way, and to other difficulties inherent to the process, the following method has been devised which gives very reliable and consistent results. Solutions of starch made in the cold with the help of caustic soda are free from many of the defects which exist in the boiling method. 230 parts cold water are placed in a wash-bottle, and the weighed quantity of starch is washed with this water into a graduated flask, and shaken till an even suspension results. Fifteen parts of a 10 per cent. caustic soda solution are then quickly run in from a burette, the flask filled with cold water up to the mark, and shaken continuously till the solution begins to thicken. The solution is generally ready for use in a couple of hours, but it is safer to let it stand over night, when all starches will have reached a stationary condition. The volumes of water and caustic soda must be accurately measured.

The strength of the caustic solution used must be always the same, and must be determined by titration, as very small differences in the strength seriously affect the results. The solutions compared must be at the same temperature. These solutions have two interesting properties:—(1) A solution obtained by diluting a stronger one has a much lower viscosity than one made up directly at the lower strength; (2) when a solution is warmed its viscosity falls regularly, but does not rise again on cooling. The starch solutions made, as above, with caustic soda, remain stable for several days.—Jour. Soc. Chem. Ind.

Color Cards.

Metachrome Olive Brown G Paste; Berlin Aniline Works, New York City.

A new dye for the production of olive shades on wool for which full working directions are given. A sample of woolen yarn and of slubbing showing six per cent. dyeings are included.

Wool Blue; Berlin Aniline Works, New York City.

Two samples of woolen goods, one showing a 2 per cent. dyeing with Wool Blue 2 B X, and the other a 2 per cent. dyeing with Wool Blue R X. In union dyeing the cotton is left white.

Dyeings on Cotton Yarn; Cassella Color Co., New York.

A folder containing 176 samples of cotton yarn showing the shades obtained by the use of the Diamine, Immedial and Basic Colors, all of them being fast to cross dyeing. Full working directions are given.

Diamine Fast Black X; Cassella Color Co., New York.

One sample of cotton piece goods, and two of cotton yarn, one of them mercerized, showing 5 and 7 per cent. dyeings with Diamine Fast Black X.

Chlorazol Violet 3B; Read Holliday & Sons, New York.

A folder showing the shades obtained on cotton yarn and piece goods with different percentages of Chlorazol Violet 3B. Working directions are given.

Diamine Fast Black X; Cassella Color Co., New York.

Five and seven per cent. dyeings of Diamine Fast Black X on cotton yarn, mercerized yarn and piece goods, for which full working directions are given.

Indocyanine 2 R F; Berlin Aniline Works, New York City.

An addition to the group of Indocyanine dyes for wool. Full working directions and a sample dyed with a 4 1/2 per cent. solution of Indocyanine 2 R F are given.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 161.

Black on Cotton Yarn.

Katigen Black T Extra Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

7½ lbs. Katigen Black T Extra Conc.
(Badische Co., 128 Duane St., New York.)
15 lbs. Sodium Sulphide.
8 lbs. Soda Ash.
60 lbs. Glauber's Salt.

Standing Bath.

4½ lbs. Katigen Black T Extra Conc.
(Badische Co., 128 Duane St., New York.)
9 lbs. Sodium Sulphide.
2 lbs. Soda Ash.
10 lbs. Glauber's Salt.

Dissolve the color, along with the sodium sulphide, and add this solution to the dye bath, to which the necessary amount of soda ash has already been added. Boil up bath and add the Glauber's salt, and dye for one hour at a temperature just below the boil.

Katigen Black T Extra possesses very good fastness to light, acids, cross-dyeing, washing and alkalies.

Recipe No. 162.

Violet on Cotton Yarn.

Chlorazol Violet 3B on 100 lbs. cotton yarn. Prepare the dye bath with

2 lbs. Chlorazol Violet 3B.
(Read Holliday & Sons, Ltd., 7 Platt St., New York.)

Dye in the ordinary way in a Glauber's or common salt bath, with or without the addition of soap or alkali.

In wool and cotton union dyeing it dyes the cotton at the boil a much heavier and bluer shade than the wool. Below 140° F. the cotton only is dyed.

Recipe No. 163.

Red on Worsted Yarn.

Milling Red 4 B A on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Milling Red 4 B A.
(Berlin Aniline Works, 213 Water St., New York.)
10 lbs. Glauber's Salt.

Enter material at 140° F. Raise slowly to a boil, and after boiling 1/2 hour, add

4 lbs. Acetic Acid,

and boil for 1/2 hour longer.

Milling Red 4 B A does not stain vegetable fibres, and its fastness is sufficiently good for most purposes.

Recipe No. 164.

Blue on Cotton Yarn.

Thiogene Navy Blue R Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

10 lbs. Thiogene Navy Blue R Conc.
(H. A. Metz & Co., 122 Hudson St., New York.)
20 lbs. Sodium Sulphide.
10 lbs. Soda Ash.
40 lbs. Common Salt.

Second Bath.

6 lbs. Thiogene Navy Blue R Conc.
(H. A. Metz & Co., 122 Hudson St., New York.)
9 lbs. Sodium Sulphide.
3 lbs. Soda Ash.
8 lbs. Common Salt.

Third Bath.

4 lbs. Thiogene Navy Blue R Conc.
(H. A. Metz & Co., 122 Hudson St., New York.)
6 lbs. Sodium Sulphide.
2 lbs. Soda Ash.
3 lbs. Common Salt.

Dye at 195° for one hour.

Thiogene Navy Blue R Conc. possesses the excellent fastness of the sulphur blues and is well suited for the dyeing of yarn and piece goods.

Recipe No. 165.

Brown on Cotton Yarn.

Chlorazol Brown M on 100 lbs. cotton yarn. Prepare the dye bath with

2 lbs. Chlorazol Brown M.
(Read Holliday & Sons, Ltd., 7 Platt St., New York.)

Dye in the ordinary way in a Glauber's or common salt bath, with or without the addition of soap or alkali.

In cotton and wool union dyeing it dyes the cotton at the boil a much heavier shade than the wool. Below 140° F. the cotton only is dyed.

Recipe No. 166.

Orange on Cotton Yarn.

Tetrazo Chlorine Orange R on 100 lbs. cotton yarn. Prepare the dye bath with

2 lbs. Tetrazo Chlorine Orange R.
(American Dyewood Co., 154 William St., New York.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Chlorine Orange R possesses very good fastness to light, washing and acids.

When used upon union goods cotton is dyed a full shade, leaving the wool only slightly tinted.

Recipe No. 167.

Blue on Worsted Yarn.

Diethyl Blue B on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Diethyl Blue B.
(E. M. Thayer & Co., 411 Atlantic Ave., Boston.)
10 lbs. Glauber's Salt.
2 lbs. Sulphuric Acid.

Enter at 160° F. and dye at a boil for one hour.

Diethyl Blue B possesses sufficient fastness for all ordinary purposes, and does not change under the electric light, and is particularly useful for shading and brightening alizarine colors.

The dyeing becomes somewhat darker upon after-chroming.

Recipe No. 168.

Blue on Cotton Yarn.

Brilliant Fast Blue B on 100 lbs. cotton yarn. Prepare the dye bath with

4 lbs. Brilliant Fast Blue B.
(Farbenfabriken of Elberfeld Co., 66 Lafayette St., New York.)
20 lbs. Common Salt.
2 lbs. Soda Ash.

Enter yarn at 180° F. and dye at a boil for one hour.

Brilliant Fast Blue B possesses excellent fastness to light for a direct cotton color, and its fastness to organic acids is also good.

Recipe No. 169.

Blue on Worsted Yarn.

Diethyl Blue A on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Diethyl Blue A.
(E. M. Thayer & Co., 411 Atlantic Ave., Boston.)
10 lbs. Glauber's Salt.
2 lbs. Sulphuric Acid.

Enter at 160° F. and dye at a boil for one hour.

Diethyl Blue A possesses sufficient fastness for all ordinary purposes, and does not change under the electric light, and is particularly useful for shading and brightening alizarine colors.

The dyeing becomes somewhat darker upon after-chroming.

Recipe No. 170.

Black on Worsted Yarn.

Chrome Fast Black P T on 100 lbs. worsted yarn. Prepare the dye bath with

10 lbs. Chrome Fast Black P T.
(Berlin Aniline Works, 213 Water St., New York.)
10 lbs. Glauber's Salt.
3 lbs. Sulphuric Acid.

Enter at 120° F., raise slowly to a boil, and boil for about one hour, or until the bath is nearly exhausted.

(Complete exhaustion is only possible with a large amount of acid, but an excess of acid, however, deteriorates the shade and must be avoided.)

Then add

4 lbs. Potassium Bichromate

and boil for 3/4 of an hour longer.

Chrome Fast Black P T possesses excellent fastness to milling, light, atmospheric influences, and also very good fastness to most of the other common color destroying agencies. Upon the whole, it is an extremely fast wool black.

Recipe No. 171.

Brown on Worsted Yarn.

Anthracene Chrome Brown S W N on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Anthracene Chrome Brown S W N. (Cassella Color Co., 182 Front St., New York.)
10 lbs. Glauber's Salt.
6 lbs. Acetic Acid.

Enter at 120° F. and bring to a boil and dye at a boil for one hour. Add

1 lb. Potassium Bichromate

to the dye bath, and after-chrome this at a boil for one hour.

Anthracene Chrome Brown S W N gives an excellent shade of brown which possesses very good fastness.

Recipe No. 172.

Blue on Cotton Yarn.

Eboli Sky Blue 6 B on 100 lbs. bleached cotton yarn. Prepare the dye bath with

¼ lb. Eboli Sky Blue 6 B. (C. Bischoff & Co., 451 Washington St., New York.)
10 lbs. Common Salt.

Enter at 180°-190° F. and dye at a boil for one hour.

Eboli Sky Blue 6 B will be found to possess remarkable brilliancy for a direct cotton color, and will prove of great value for many purposes in cotton dyeing.

Recipe No. 173.

Black on Worsted Yarn.

Chrome Fast Black P 4 B on 100 lbs. worsted yarn. Prepare the dye bath with

10 lbs. Chrome Fast Black P 4 B. (Berlin Aniline Works, 213 Water St., New York.)
10 lbs. Glauber's Salt.
3 lbs. Sulphuric Acid.

Enter at 120° F., raise slowly to a boil, and boil for about one hour, or until the bath is nearly exhausted.

(Complete exhaustion is only possible with a large amount of acid, but an excess of acid, however, deteriorates the shade and must be avoided.)

Then add

4 lbs. Potassium Bichromate .

and boil 3/4 of an hour longer.

Chrome Fast Black P 4 B possesses excellent fastness to milling, light, atmospheric influences, and also very good fastness to most of the other common color destroying agencies. Upon the whole, it is an extremely fast wool black.

Recipe No. 174.

Brown on Worsted Yarn.

Anthracene Chromate Brown 3 G on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Anthracene Chromate Brown 3 G. (Cassella Color Co., 182 Front St., New York.)

Boil up the solution and add

3 lbs. Potassium Bichromate

dissolved in cold water.

Enter yarn at 160° F., raise very slowly to a boil and boil 3/4 of an hour. Then add

2 to 3 lbs. Acetic Acid

and boil 1 1/2 hours longer.

Anthracene Chromate Brown 3G gives dyeings of a yellowish hue which possess excellent fastness to light, washing, alkalies, carbonizing and steaming.

Recipe No. 175.

Blue on Worsted Yarn.

Chrome Blue R on 100 lbs. mordanted worsted yarn. First mordant the yarn in a bath made up with

3 lbs. Potassium Bichromate
2 lbs. Tartar.

Enter at 120° F. and mordant at a boil for 1 1/2 hours. Wash the mordanted material and dye without drying, if possible, in a bath made up with

2 lbs. Chrome Blue R. (W. F. Sykes & Co., 85 Water St., New York.)
5 lbs. Acetic Acid,

entering at 120° F., bringing slowly to a boil and dyeing at a boil for 1/2 hour.

Chrome Blue R produces dyeings of considerable brilliancy and possesses good fastness to the ordinary color destroying agencies.

Recipe No. 176.

Violet on Worsted Yarn.

Acid Violet 4 B N S on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Acid Violet 4 B N S. (W. F. Sykes & Co., 85 Water St., New York.)
10 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 160° F. and dye at a boil for one hour.

Acid Violet 4 B N S will be found to possess sufficient fastness for ordinary purposes, and will prove of value in shading, when used in conjunction with other acid dyestuffs.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Alabama, Butler Springs. M. B. Lewis of Birmingham, secretary and treasurer of the Marble City Mills, advises that building for the new mill reported to be erected at this place has been contracted for, but the organization of the company has not yet been completed. It is expected that complete details will be given out by November 1.

*Alabama, Childersburg Plans and specifications have been prepared by Fred S. Hinds, mill architect, of Boston, for the building to be erected for the Coosa River Spinning Company, recently reported incorporated. Contract for the erection of the building has been awarded to Algernon Blair of Montgomery, and 10,000 spindles for the manufacture of medium yarns will be installed. It is expected that production will begin by February 1. D. L. Lewis (Sycamore, Ala.) and A. DeCourt (Boston, Mass.) are at the head of the new company.

*Alabama, Sylacauga. A plant for the Sylacauga Mills, recently reported incorporated with a capital stock of $85,000, will be erected at once. 5,000 spindles will be installed for the manufacture of 20s to 30s cotton hosiery yarns. It is expected that the production of goods will begin about June, 1908. J. W. Brown, who was reported as at the head of the project, has been elected president and O. F. Luttnell is treasurer.

Connecticut, Meriden. Arthur Armstrong, formerly connected with the Armstrong Braiding Company (Sandwich, Mass.), is to start a braiding factory. He has purchased some machinery formerly operated at Sandwich, and will remove it to this place.

*Connecticut, Phoenixville. The new cotton plant to be started at this place will be operated by William Smith & Son. Cotton twine and coarse cotton yarns will be manufactured. It is expected that employment will be given to about twelve hands. The interested parties are Wm. Smith and his son, Wm. Smith, Jr., who were formerly connected with the Windham Manufacturing Company at Willimantic.

*Georgia, Columbus. The new building erected for the Swift Spinning Mill is nearly completed and a large part of the machinery has been installed. Electric power will be furnished by the Columbus Power Company.

*Georgia, Douglasville. Building for the Lois Cotton Mills is about completed and it is expected that machinery will be installed and manufacturing begin about January 1. The building is a brick structure, 2 stories high, and 100 by 400 feet. 10,000 spindles and a large number of looms will be installed for the manufacture of print cloths. The company was incorporated in August with capital stock of $200,000. J. M. Gear is president; M. E. Gear, vice president, and J. T. Duncan, secretary.

*Massachusetts, New Bedford. The erection of a building for the proposed new mill to be located on Hastings Wharf will not be taken up until next year. Plans and specifications are being prepared.

*Massachusetts, Taunton. The remodelling of the old Atlas Tack Co.'s plant for the Taunton Narrow Fabric Co., a concern reported with capital stock of $30,000, in July, is nearly completed. Machinery is arriving every few days and is being set up immediately. It has not been definitely decided when the plant will start up. Charles F. Orr of Attleboro is president of the company.

*North Carolina, Belmont. The new cotton mill in which S. P. & R. L. Stowe, A. C. Lineburger, D. E. Rhyne and other prominent manufacturers are interested will be known as the Majestic Mfg. Company, not the Monarch Mfg. Company as previously reported. The company has an authorized capital stock of $250,000, $200,000 of which has been subscribed. A meeting of the stockholders will be held within a few days at which a permanent organization will be effected and officers elected. A plant will be built and 10,000 spindles installed. 60s combed and carded yarns will be manufactured. It is expected that manufacturing will begin before October, 1908.

*North Carolina, Davidson. Definite plans for the Delburg Cotton Mills Company are rapidly being made, and it is expected that manufacturing operations will begin Feb. 1, 1908. Construction work on the buildings commenced September 30. This is the company of which J. P. Munroe is president and F. J. Knox is treasurer. The capital stock is $50,000, which may be increased to $100,000. 2,500 spindles will be operated on 12s to 20s cotton yarns.

*North Carolina, Denton. The Denton Cotton Mills Company have been incorporated with a capital stock of $100,000. A 5,000-spindle cotton yarn mill will be erected immediately. Berry Davidson of Gibsonville, N. C.; J. W. Noel of Lexington, N. C., and others are the incorporators.

*North Carolina, Gastonia. Construction work on the buildings for the Dunn Mfg. Company will commence at once and it is expected that the production of goods will begin July 1, 1908. Fine cotton yarns will be manufactured on 5,000 spindles. C. B. Armstrong is president and treasurer, and C. M. Dunn is superintendent. The capital stock is $100,000.

*North Carolina, High Point. Subscriptions are being raised for the proposed $200,000 cotton mill in which F. M. Pickett and W. H. Ragon are reported as interested. $35,000 has already been subscribed and it is believed the entire capital stock will be forthcoming.

*North Carolina, Kinston. A charter has been granted the Caswell Cotton Mills. The capital stock is $200,000, of which $76,000 is paid in. This is the company in which J. E. Hood, J. W. Granger, and others are reported as interested. A plant for the manufacture of cotton yarns will probably be built at once.

*North Carolina, Long Island. All the capital has been subscribed for the Long Island Cotton Mills' proposed increase from $50,000 to $200,000 capital stock. It is reported that the management will now contract for the erection of a 5,000 spindle mill at Buffalo Shoals and electric power plant as formerly reported.

*North Carolina, Maxton. A charter for the proposed new mill at this place has been applied for. The capital stock will be $150,000. A plant will be built and 10,000 spindles, which will be run by electricity, will be installed. G. B. Patterson, L. T. Cook, S. B. McLean and T. O. Evans are interested.

*North Carolina, Newton. The buildings for the Ridgeview Cotton Mill will be erected just as soon as the material can be secured. This company was organized in August with a capital stock of $100,000.

*North Carolina, St. Pauls. Construction work on the new building for the St. Paul's Cotton Mills is going forward and contract for machinery equipment has been awarded. This company was incorporated in July with a capital stock of $100,000.

*North Carolina, Salisbury. The Grace Mills have been incorporated with a capital stock of $50,000, of which $15,000 has been subscribed. The incorporators are F. L. Robbins, J. P. Gibson and Grace Robbins. Operations have been started on mercerized cottons, 18 looms being operated. It is expected that a number of jacquard looms will be installed shortly and the production more than doubled. Mr. Robbins was formerly manager of the Kesler Mfg. Company at this place.

*North Carolina, Shelby. Plans for the new buildings for the Ella Mfg. Company, reported incorporated with a capital stock of $100,000, in September, have been given out. A one-story brick building, 77 by 356 feet, with a concrete floor, will be built. 5,000 spindles and 126 looms will be installed. Contracts have been awarded and it is expected that construction work on the buildings will commence very shortly. Convertible cotton goods will be manufactured.

*North Carolina, Weldon. Contract for the buildings to be erected for the Shaw Cotton Mills, Inc., has not been let, but the officers expect that construction work will begin by October 15, and that yarn will be manufactured by May 1, 1908. This company is incorporated at $100,000. W. T. Shaw is president and buyer; W. A. Pierce, treasurer, and O. L. Smith, superintendent. 5,129 spindles will be installed for the manufacture of 20s to 40s cotton yarns.

*North Carolina, Wilson. Subscription books for capital stock for the proposed $250,000 cotton mill have been opened by B. S. Boykin, one of the promoters of the enterprise. A large amount of stock has been taken and the promoters are negotiating for a site on the Norfolk & Southern Railroad in the western section of the town.

*Oklahoma, Mangum. A charter has been issued to the Farmers' Cotton Mill Co. with capital stock of $100,000. W. M. Harris, James Little, Wm. Kelly, S. H. Little and others of Mangum are the directors.

Rhode Island, Hopkinton. The Centreville Mills have been incorporated with a capital stock of $20,000 for the manufacture of cotton yarns. O. Edwards, manager of the Ashaway Line and Twine Co.'s plant at Rockville, L. A. Briggs, manager of the Ashaway Line and Twine Co.'s plant at Ashaway; Geo. B. Langworthy and Frank Hall, are the incorporators.

*Rhode Island, River Point. The directorate of the Warwick Lace Works, recently reported incorporated with a capital stock of $300,000, have elected officers. Henry C. Dexter, agent and secretary of the Greene & Daniels Co. of Pawtucket, was elected president, and Henry T. White of Providence, secretary and treasurer. It is intended to erect at once a suitable building and a committee has been appointed to secure bids for a brick structure 47 by 140 feet, and two stories high. It is reported that a large amount of the machinery will be ordered abroad.

*Rhode Island, Woonsocket. The building committee of the Lawton Spinning Co. has awarded the contract for the construction of a new $450,000 thread mill to the J. W. Bishop Co. of Worcester, the lowest bidders. The contractors have agreed to have the building ready for the installation of machinery by March 15, 1908. Excavation will begin at once.

*South Carolina, Rock Hill. It has been decided to build the Wymojo Cotton Mill in this city. W. W. Moore and J. B. Johnson have received subscriptions for $150,000 of the stock and the company will be capitalized at this amount. Mr. Moore will be president and Mr. Johnson vice president. Contract for machinery will be let at once.

Enlargements and Improvements.

Alabama, Montgomery. The People's Cotton Factory has placed on order with the Lowell Machine Shop for 10 speeders which will be set up as soon as delivered. 10,000 spindles and 320 looms are operated on shirtings, sheetings and bag goods.

Alabama, Prattville. The Prattville Cotton Mills have placed an order for 2,000 spindles with the Lowell Machine Shop. The new machinery will be installed as fast as it is delivered.

Alabama, Spigner Station. The Alabama Cotton Mills are installing machinery to double their present capacity. 3,300 spindles, 50 looms, a quantity of carding machinery, a 200 h. p. boiler, and dynamo are being set up. J. W. Pierson, formerly with the Avondale Mills, Birmingham, Ala., has been appointed superintendent.

*Connecticut, Moosup. A large amount of spinning and carding machinery is being installed in the plant of the Floyd Cranska Company in order

to handle the increasing business of the concern. 15,000 spindles are operated on combed cotton yarns.

*Georgia, Quitman. The capital stock of the Atlantic & Gulf Mills has been increased to $250,000, all paid in. As was previously reported, 8 40-inch cards, 1 picker, 8 combers and 1 lapper are being installed.

Georgia, Thomson. A large addition will be made to the plant of the J. E. Smith Cotton Mfg. Company. At present 9,000 spindles and 240 looms are run on brown cotton bagging. M. P. Pitts is general manager and superintendent.

Massachusetts, Chicopee Falls. The Chicopee Mfg. Co. is installing a number of new spinning frames which will be driven by individual motors. To provide power for the increased equipment, a new generator is also being installed.

Massachusetts, Fall River. The stockholders of the Merchants' Mfg. Co. will decide Oct. 23 on a proposition to increase the capital from $800,000 to $1,200,000. It is said that a new weave shed will be built very early in the spring.

*Massachusetts, Lawrence. Work has begun on the superstructure of the new weave shed being erected for the Atlantic Cotton Mills. The building will be 300 by 70 feet and two stories high. It will be equipped for weave sheetings.

*Massachusetts, Southbridge. Contract for an addition to the Central Mills Company's plant has been awarded.

*Massachusetts, Taunton. The new mill for the Taunton River Mills is about ready to start up. The last part of the machinery equipment is being set up.

*Mississippi, Natchez. The Natchez Cotton Mills Co. has placed an order for 300 automatic looms to be delivered by January 1. Brown sheetings and drills are manufactured.

*Missouri, Kansas City. The Kansas City Cotton Mills are installing 5,000 spindles and additional looms with complementary machinery. It is expected that all the equipment will be running by December 1. Cotton duck is manufactured.

New York, Jamestown. A large addition to the plant of the Chautauqua Towel Mills is to be erected. The plans call for a building of brick construction. Turkish towels, wash cloths and similar goods are manufactured from cotton.

*North Carolina, Roanoke Rapids. Upon the completion of the addition being built for the Roanoke Mills Co., 8000 new spindles and 600 looms will be installed. At present 15,000 spindles and 600 looms are operated on colored cotton goods and towels.

*North Carolina, Roanoke Rapids. A contract for an addition to its plant has been awarded by the Rosemary Mfg. Company. The dimensions of the new building have not been given out, but undoubtedly 5,000 spindles and a number of looms will be installed in the building when completed.

Pennsylvania, Philadelphia. The Ontario Spinning Co., manufacturers of cotton hosiery yarns, 10s to 20s on cones, on 6,200 spindles at 1729 Philip St., are setting up a new 220 spindle frame recently received from the Whitin Machine Works. The company has a capital of $75,000. W. Arrott is president; J. P. Murphey, secretary and treasurer, and W. T. Westerman, superintendent and manager. Mr. Westerman, who is now arranging for a vacation, will accompany the delegates to the International Cotton Convention on their journey through the cotton belt.

Pennsylvania, Philadelphia. Chas. S. Curry, who manufactured upholstery goods on 5 looms at 2137-43 E. Firth St. for many years, has removed his plant to new and enlarged quarters at 2711 Palethorp St. He sells direct.

Pennsylvania, Philadelphia. James B. Ward & Bro., manufacturers of Turkish towels and novelties on 125 looms, and operators of a bleachery on cotton fabrics, cloths, hosiery and underwear, with a capacity of 3,000 pounds per day, both plants being located at Howard St. and Lehigh Ave., have contracted with Hungerford & Terry, filtration engineers, Pennsylvania Building, for the installation of one of their latest improved high pressure filter plants, which they expect to have set up and in satisfactory operation within a short time.

Rhode Island, Bellefont. The Brindle Webbing Company, operated by David Lyman (Woonsocket) and Thos. Brindle, is adding five new looms to its equipment. At present 42 looms are operated on all kinds of narrow fabrics. Mr. Brindle reports that the plant is very busy.

*Rhode Island, Westerly. Improvements being made in the Lorraine Mfg. Co's plant at this place consist of the installation of 80 new looms to replace old ones, and a number of new spinning frames in addition to the number of spindles now operated.

WOOLEN.

New Mills.

*Indiana, Mishawaka. The Mishawaka Textile Co., reported incorporated in February, is operating a plant on astrachans, giving employment to 20 hands. The company is capitalized at $50,000. J. E. White is secretary, manager and buyer; J. McM. Smith is treasurer.

*Minnesota, St. Paul. It is undoubtedly a fact that a $75,000 mill for the manufacture of woolen suitings will be built. Nothing can be learned of the parties interested, but a mill architect has been commissioned to make plans for the proposed plant. We have learned that construction work will not be started until next season at the earliest.

Rhode Island, Pascoag. It is reported that the mill formerly operated as the Hawthorne Worsted Co. will be started up about January 1, by A. H. & F. L. Sayles, on fancy worsted fabrics. The building is owned by the Pascoag Realty Co. of which F. L. Sayles is president. When built it was leased to Samuel Mellor and P. A. Schwartz, who installed worsted machinery and operated the plant under the name of the Hawthorne Worsted Mills. Several months ago the Hawthorne com-

pany went into the hands of a receiver and the machinery was purchased by the Pascoag Realty Co., through F. L. Sayles. It is stated that very few changes will be necessary before starting up the plant. A. H. & F. L. Sayles also operate the Union and the Lincoln Mills at this place. Wm. Lacy will be the superintendent of the new mill.

*Wisconsin, Menasha. The woolen yarn plant being started by J. M. Stickler, formerly proprietor of the Mauston Woolen Mills, Mauston, Wis., will be ready for the production of goods about Feb., 1908. Space has been leased in a building which is being remodelled. Low grade hosiery yarns will be manufactured on 1 set of cards and 240 spindles. Electric power will be used.

Wisconsin, Milwaukee. The Kassmann Mfg. Company, a new concern with a capital stock of $50,000, has started operations in the plant formerly occupied by the Milwaukee Worsted Cloth Company. Sixteen looms are operated on high grade black and blue piece dyes. Bruno Kassmann is president; F. A. Rose, treasurer, and E. D. Anderson, of Chicago, selling agent. Mr. Kassmann and Mr. Rose are the buyers. All yarns are bought.

Enlargements and Improvements.

Alabama, Newton. T. J. Killibrew & Son are installing a new slubber and speeder to replace old machinery. Some time ago a dye house was built and equipped to dye raw stock. At the present time a two-story brick addition 40 by 80 feet is being erected and will be used as store and warehouse. This plant is the only woolen mill in Alabama and manufactures jeans, which are made up into pants for men and boys.

*Connecticut, Central Village. As previously reported, plans have been completed for a large addition to the Central Worsted Company's plant. Nothing further will be done in the matter, however, until next spring.

Connecticut, Norwalk. A branch plant of the Salt's Textile Mfg. Company at this place has leased a building in which finishing machinery will be installed.

Connecticut, Norwich. The work of rebuilding the burned mill of the Preston Woolen Company has started and will be pushed along as rapidly as possible. The new building will be 80 by 60 feet.

*Maine, North Monmouth. The John H. McIlroy Son & Co. are starting a weaving plant in the building which was used by the J. R. King Webbing Co. Machinery is being installed which will give the J. H. McIlroy Co. an equipment of 6 sets and 50 broad looms. Woolen blankets are manufactured.

*Massachusetts, Methuen. The new cement weave shed for the Tremont Worsted Company will be completed within a few weeks. Upon its completion the looms now operated will be installed and a number of new looms added in order to reduce the overtime work necessary under present conditions.

Massachusetts, North Adams. The North Adams Manufacturing Co., who are installing a new 500,000 gallon filtration plant, supplied by Hungerford & Terry, Pennsylvania Building, 15th and Chestnut Streets, Philadelphia, have also put in a battery of 200 h. p. electric motors. It is reported that this plant is working double time on fancy cassimeres, cheviots, etc., operating 14 sets and 60 looms. They dye and finish.

Massachusetts, Worcester. The Greenwood Mills of Passaic, N. J., of which Mr. H. Hodgson is president and treasurer, have leased the property of the Wachusetts Mills and will move the business from Passaic to Worcester in order to concentrate interests and facilitate the management of Mr. Hodgson's interests. The Queensbury Mills of Worcester are also under the management of Mr. Hodgson, who is treasurer and president.

*Michigan, Eaton Rapids Horner Bros., proprietors of the Eaton Rapids Woolen Mills, will start construction work within a few days on a two-story addition to their plant, 50 by 75 feet. Carding and spinning machinery will be installed. Wool and merino knitting and weaving yarns are manufactured. Report of a second addition to be built by them is incorrect.

New Jersey, Garfield. The New Jersey Worsted Spinning Company is considering plans for an addition which will largely increase its capacity. It is stated that a one-story brick building, 150 by 250 feet, will be built.

*New York, Fulton. The new building of the Fulton Worsted Mills (American Woolen Co.), which has been in process of construction since last May, is now nearly completed. The building is two stories in height. The upper floor is to be used as shipping room, and washing and shearing machinery is being installed on the ground floor.

*New Jersey, Passaic. The second proposed addition to the Botany Worsted Mills will be built shortly. A permit has been issued for a 1-story addition, 70 by 100 feet which will be erected at a cost of $12,000. 7,000 square feet will be added to the working space. Within the last two years, additions costing nearly $350,000 have been erected by the Botany Worsted Mills.

Pennsylvania, Lenni. Plans are being made for extensive improvements to the Victoria Plush Mills. The mill at this place is a branch of the Victoria Plush Mills at Swathmore. 110 looms are operated on velvets, plushes, corduroys, etc.

Pennsylvania, Philadelphia. Bush & Terry, manufacturers of art squares on 11 looms at Jasper and Thayer Sts., have contracted with Robert Beatty & Bro. for the erection of a four-story brick addition to their present factory. The addition will measure 48.7 by 61.8 feet, and will cost $9,300. Operations will be commenced at once.

Rhode Island, Pawtucket. Work has commenced on the foundation for a second addition to the weave shed of D. Goff & Sons. It is reported that a large number of looms will be ordered shortly.

*Rhode Island, Woonsocket. The Perseverance Worsted Co. reports that construction work on the reported addition will commence at once.

The new building will be three stories high and will have space for 120 looms. At the present time 81 looms are operated on men's wear, fancy worsteds. J. H. Singleton is treasurer and agent.

Mills Starting Up.

Massachusetts, Collinsville. The Beaver Brook Mills of the American Woolen Company have started up after an idleness of three months, during which time extensive repairs have been made and a large amount of new machinery added.

Minnesota, Fosston. It is expected that the Fosston Woolen Mill, which shut down some time ago, will start up about December 1. F. A. Patrick & Company of Duluth, who bought the plant in March, have made a number of improvements in order to increase the output. Flannels, blankets and yarns are manufactured.

*Pennsylvania, Philadelphia. The Falls of Schuylkill Mill, John Dobson, proprietor, has started up after a shut down of three months owing to the blowing out of a cylinder head which wrecked the power plant.

SILK.

New Mills.

*Connecticut, Manchester. Preparations are being made to start the plant formerly operated by Matchett Bros. which, as previously reported, has been leased by Max Schlesinger of New York. It is expected that manufacturing will commence before the end of the month. Ladies' dress silks will be manufactured.

New Jersey, Passaic. Another Paterson company starting a branch mill at this place is the Speirs Silk Company, proprietors of the Essex & Addy Mills, which manufacture ribbons and veilings on 22 ribbon and 26 broad looms. They are installing 12 ribbon looms in the Waterhouse Mill. It is expected that additional looms will be installed later.

New Jersey, Passaic. The H. H. Seaton Company of Paterson, proprietors of the Industry Mill, are starting a silk throwing plant of 2,000 spindles in the Waterhouse Mill. They have leased the space formerly occupied by the Argyro Throwing Company.

New Jersey, Paterson. A new company known as the Schwartz Silk Company is installing 20 looms at 230 Wayne Avenue. Broad silks will be the production.

*New Jersey, Paterson. Samuel Aitken, formerly superintendent for W. Little & Co. will start a plant for the manufacture of broad silks in the Spruce street mill, instead of the Dordoni Mill on River Street as was previously reported. 12 looms will be installed at first. Mr. Aitken expects to be producing goods by November 15.

New Jersey, Paterson. Floor space in the Van Kirk Mill has been leased by Ray Buser and Jos. Sweeney. It is stated that they will install 12 looms for the manufacture of silk ribbons. The equipment will probably be increased after the plant is running smoothly.

New Jersey, Paterson. Collins & Kaltz, a new firm, have leased space in the mill at 109 Spruce St., and are installing 10 looms adapted to the manufacture of plain broad silks. They expect to begin manufacturing within a few days.

*New York, Boonville. Manufacturing in the new mill started by Ludwig Littauer will begin October 15. 3,000 spindles have been installed. Thrown silk, tram and organzine will be manufactured. An electric power plant is being installed.

New York, Newburg. The Newburg Silk Company has been incorporated to manufacture silk goods with a capital stock of $10,000. The incorporators are Wm. J. Hadfield and J. Elwood Easman of Newburg, A. D. Lent of Harwin, N. Y., and others.

*Pennsylvania, Doylestown. A new plant for the manufacture of silk ribbons is being started by Bitzer Bros. It is expected that manufacturing operations will commence before the end of the month.

*Pennsylvania, Easton. Manufacturing will commence in the plant of the Florence Silk Co., recently reported incorporated with a capital stock of $300,000, about November 1. 75 looms will be operated on broad silks, giving employment to about 75 hands. Edgar Herbert has been elected president of the company, and Drake F. Conklin, treasurer.

Pennsylvania, Philadelphia. The Narricot Ribbon Company, with A. R. Tams as superintendent and buyer, is operating ten looms by electricity on narrow ribbons at 1033-35 Race St., using 40/2 and 60/2 C. E. and mercerized yarns and raw silk. They are very busy.

Enlargements and Improvements.

*New Jersey, Paterson. Owing to increased business necessitating an enlarged equipment, the Central Ribbon Company will move their plant to the Van Kirk Mill, Lakeview. Twenty new ribbon looms will be installed. The proposed increase in equipment was reported in August.

*Pennsylvania, Allentown. The Stuyvesant Silk Company of Paterson, N. J., has leased a building formerly operated as a furniture factory at this place, and is removing its equipment from Paterson. Some of the machinery will be in operation by October 15. Broad silks will be manufactured.

MISCELLANEOUS.

Alabama, Huntsville. A company has been organized by local capitalists for the manufacture of jute bagging, and will establish a plant in buildings formerly used as a furniture factory. It is reported that the new company will be known as the Huntsville Bagging Company and will be incorporated with a capital stock of $150,000. Manufacturing will be begun by January 1.

New Hampshire, Meredith. The Atlas Linen Co. has been shut down and is reported to be in financial difficulties. J. B. Studley of Boston and E. P. Nute of Farmington, N. H., have been appointed receivers and Mr. Studley states that just as soon as supplies are received operations will be

resumed. Mr. Corne, treasurer of the company, states that the company will probably be reorganized. The concern was organized about six years ago for the manufacture of linen towels and other linen goods.

New Jersey, Jersey City. The M. Lautman Company has been incorporated with a capital stock of $5,000. Laces and embroidery will be manufactured. John Lautman, 297 4th Ave., will be the president of the company.

New Jersey, Jersey City. A certificate of incorporation of the American Silk Yarn Co. has been filed. It is said that the company will manufacture, by a new process, textile fabrics which will look like silk. The capital stock is placed at $100,000. Geo. W. Flaacke, 1 Montgomery Street, Jersey City, is agent for the company.

New Jersey, Paterson. William Thompson, proprietor of the Globe Dye Works, of Little Falls, N. j., has purchased a lot on 6th Ave. A silk dyeing plant will be erected next spring.

New Jersey, Paterson. A new dyeing establishment has been incorporated under the name of the Paterson Dye Works. The authorized capital is $10,000. Frank Dwyer, George McLean and Thomas McCram are the incorporators. Cotton, woolen and silk yarns and fabrics will be dyed and finished.

Pennsylvania, Philadelphia. The International Water-Shrinking and Drying Co. is operating a plant at 429-31 Orianna St. for the shrinking of canvas and hair cloth. The main office of the company is located at 405 W. Baltimore St., Baltimore, Md. It is intended to start up another branch plant at New York within a short time.

Pennsylvania, Philadelphia. J. Wesley Johnston, formerly president of the J. Wesley Johnston & Colton Carpet Yarn Spinning Co., has started up a business for the manufacture of pickered jute and waste at 1726-28-30 N. Howard St. He has in operation 1 picker, 2 ravellers, 2 garnets and 1 puller. He sells direct.

*Pennsylvania, Philadelphia. The new looms reported as ordered for the Schadewald Mills are being set up. 65 looms for weaving hair cloth are being added, making a total of 585 looms to be operated on hair cloth for the hat trade.

Pennsylvania, Philadelphia. Gordon Bros., manufacturers of hair cloth and weaving and brush hair at Pierce and Orthodox Sts., Frankford, are asking for estimates on plans prepared by Stearns & Castor, on a two-story factory building, 38 feet, 2 inches, by 38 feet, 2 inches, to be erected as an addition to their present plant. They are now operating about 250 looms and it is said when this addition has been erected they will put in a large number of new looms. They sell direct. The company will be incorporated.

Pennsylvania, Philadelphia. Estimates are being asked for a two-story and basement factory building to be erected for John Graf at A and Courtland Sts., Olney. The building will measure 126 by 44.2 feet and will be of brick construction. Into this building, when erected, Mr. Graf will remove the machinery which he is now operating, consisting of 11 Swiss embroidery machines, at 138 S. 3d St., on silk and mercerized embroideries. The building in which Mr. Graf is now located has been sold to the government and will be used as a warehouse.

Pennsylvania, Philadelphia. Lazowick Bros., 527 Lombard St., manufacturers of cut hosiery and embroiderers of hosiery of all kinds, operating 25 Bonnaz machines, report that they have recently installed a new and up-to-date plant for the finishing of hosiery and are now soliciting business from the trade in general. They are very busy.

*Pennsylvania, Reading. The enlargement being considered by the Prospect Dye Works will be built to the new plant recently started at Spring Valley. Construction work will not be started until spring.

Rhode Island, Apponaug. A new addition is being built to the plant of the Apponaug Company.

Rhode Island, Crompton. An addition is being built to the plant of the Crompton Company.

FAILURES AND SUSPENSIONS.

Illinois, Chicago. The Perfect Knitting Mills, 235 Jackson Boulevard, have been declared bankrupt, and Edward C. Day has been appointed receiver.

Kentucky, Paducah. The Dixie Mills Co., manufacturers of men's and women's seamless and ribbed cotton hosiery on 131 knitting machines, has gone into the hands of a receiver. The company is capitalized at $100,000. R. B. Phillips is president, and T. L. Upton, treasurer and general manager.

New Hampshire, Franklin. Benjamin F. Hayes, proprietor of a small woolen mill at this place, has filed a petition in bankruptcy. He operated 2 sets of cards and 14 looms on woolen and worsted goods. The plant was started in September, 1906.

*North Carolina, King's Mountain. Mr. J. S. Mauner, president of the Bonnie Cotton Mills, has been appointed receiver for the Crowder Mountain Cotton Mills with instructions to operate the mill for the present.

*Pennsylvania, Philadelphia. Robert J. McDowell, trading as McDowell Bros., manufacturer of ingrain carpets on 20 looms at 2137-43 E. Firth St., who recently failed and went into the hands of a receiver, has been adjudged an involuntary bankrupt. David W. Amram has been named as referee.

Pennsylvania, Philadelphia. Creditors have filed a petition to have the J. H. Sprowles Co., Wayne Junction, adjudged an involuntary bankrupt. The petitioners are G. E. Saul, $14.500; Hunter and Dickson, $5.22; and Robert E. Lynch & Son, $56.75. The Sprowles Company are well known as manufacturers of men's and women's seamless hosiery with 102 knitters with a capital of $20,000. G. E. Saul is president; H. D. Sprowles, secretary and J. H. Sprowles, treasurer.

FIRES.

Canada, Ontario, Orangeville. The plant of Moody Brothers, blanket manufacturers, has been destroyed by fire. Loss is $6,000, covered by insurance.

Massachusetts, Chelsea. The plant of the Standard Cordage Company has been practically destroyed by fire. The loss is about $35,000, covered by insurance. This plant was shut down about five years ago and has not been operated since.

New York, Amsterdam. Damage to the extent of $1,000 was caused in No. 5 Mill of A. V. Morris & Sons, by fire. No. 5 Mill contains 320 mule spindles, 9,000 ring spindles and 28 cards, used in the manufacture of cotton yarn.

Ohio, New Richmond. The plant of Dormer Bros., manufacturers of mittens and hosiery, has been destroyed by fire. The loss is $35,000, partially covered by insurance. This plant is a branch of Dormer Bros. of Cincinnati, Ohio.

Pennsylvania. Philadelphia. A fire in the building at 5155 Wakefield St., Germantown, in which is located the Charter Hosiery Co., created a damage of $35,000. The Charter Hosiery Co. are manufacturers of men's, women's and children's seamless hosiery, with John S. Palmer as president, and J. F. Farrell, treasurer, the production being sold through New York.

Pennsylvania, Philadelphia Fire and water recently caused a damage of $15,000 to the mill in which are located the Oswald Lever Co. and the Florence Knitting Mills, at Lehigh Ave. and Mutter Sts. The Oswald Lever Co. are well known as manufacturers of textile machinery and the Florence Knitting Mills operat 12 knitters and 25 sewing machines on eiderdowns, jersey cloths, bathing suits and athletic goods. The damage is being repaired and both concerns are continuing their operations as heretofore.

Pennsylvania, Philadelphia. The Alva Carpet and Rug Company, Oxford St., Frankford, was recently damaged by fire to the extent of $10,000. The company, which has a capital of $100,000, operates seven looms on seamless tapestry Brussels rugs. The officers of the company are Benj. H. Gledhill, pres. and supt.; Jeremiah Keys, vice pres.; A. G. Fromuth, sec. and treas. The damage will be repaired at once in order that the company may continue its operations, as they are very busy.

FACTS AND GOSSIP.

Alabama, Prattville. A number of prominent men are considering the advisability of starting a cotton yarn mill. Nothing definite can be learned about the project.

Canada, British Columbia, Vancouver. J. L. Low, a woolen manufacturer of Dundee, Scotland, is considering plans for starting a woolen mill at this place.

Canada, Ontario, Tillsonburgh. It is reported that the Brantford Linen Mfg. Company will shortly move its plant to this place.

*Connecticut, Norwich. Plans are being made for the rebuilding of the Preston Woolen Company which was burned in August. The new building will be 80 by 60 feet. Contract has not been let.

*Georgia, Junction City. The development of this town is very rapid and it is understood that the proposed $200,000 cotton mill will be one of the first industries in operation. C. W. Moore of Paschal, and C. R. Reynolds of Broxton, are securing subscriptions.

Georgia, Pelham. The capital stock of the Pelham Mfg. Co. has recently been increased to $300,000. The increased capital will not be used for increasing equipment at the present time.

Kentucky, Louisville. A. T. McDonald, commissioner of the Industrial Club, has interested cotton manufacturers in a proposition to establish a new cotton mill at this place. None of the plans for the proposed mill have been given out.

Massachusetts, Adams. Machinery is being moved to Worcester from the plant of Davis & Mahoney Spinning Co., formerly spinners of woolen and merino yarns, operating six sets.

Massachusetts, Clinton. It is reported that machinery is being installed which will make the Victor Mfg. Company an all worsted mill. The woolen machinery is being taken out and sold.

Massachusetts, Fall River. A special meeting of the stockholders will be called by the directors of the Davol Mills, on November 14, for the purpose of deciding on a proposed increase to the capital stock of 25 per cent. The present capital of the mill is $400,000; the proposed increase would make it $500,000.

Massachusetts, Fall River. A large tract of land, suitable for cotton manufacuring, has been purchased by Chester W. Green, presumably for a syndicate which will erect a cotton mill. None of the details can be learned.

Massachusetts, Holyoke. No preparations have been made for the new mill rumored to be built by the Lyman Mills. Undoubtedly the matter will hold over until spring.

Massachusetts, New Bedford. Work on the proposed addition to the plant of the Beacon Mfg. Company will not be started until spring.

*Massachusetts, Saxonville. The reported enlargement to be built to the Saxonville Mill will not be built this winter, in fact nothing definite has been decided in the matter. The arrangement depends entirely upon the amount of yarn required by the Roxbury Carpet Mill, which depends upon the Saxonville Mill for yarns.

*Massachusetts, South Framingham. Alterations in the building formerly occupied by Whitson & Hoyle for the Geo. E. Wye Co. of Needham, have been completed. Machinery will not be installed until about December 1, as the fall business makes it impossible to move machinery from Needham at this time.

*Massachusetts, Spencer. The Allendale Woolen Co. is making overtures to the creditors of the company for a settlement of outstanding bills on

a basis of 20 cents on the dollar. The plant of the Allendale Woolen Co., was partly destroyed by fire about two weeks ago, the company receiving $16,700 in the insurance adjustment.

Massachusetts, Taunton. It is rumored that a new cotton manufacturing concern with a capital of $150,000 is in process of formation and option has been secured on a site near the Whittenton Mfg. Co. It is stated that $125,000 of the capital stock has already been subscribed. None of the details have been made public.

*Michigan, Detroit. The Pioneer Woolen Mills are being operated by receiver Chas. E. Scotney in order to fill orders now on hand. After November 1 the company will be reorganized and Mr. Scotney will fill the position of general manager.

Missouri, Kansas City. The Manufacturers' and Merchants' Association is in communication with a knit goods manufacturer regarding establishing a knitting mill in this city. None of the details can be learned at this time.

New Jersey, Camden. The Komi Weaving Co. has just been incorporated with a capital of $125,000, the incorporators being R. H. Comey and Joseph Hopkins, of the R. H. Comey Co., and Clarence E. Weeks. They report that the manufacturing end of this business will be conducted in foreign countries where hats will be made of palm leaf, the Komi Weaving Company simply acting as selling agents in this country.

New Jersey, Hopewell. It is probable that a woolen mill will be located here. A manufacturer has submitted a proposition to the president of the Board of Trade which it is thought will be accepted.

New Jersey, Phillipsburg. The Continental Silk Mills of Paterson have secured land near the plant of the Standard Silk Company and will erect and equip a plant at a reported cost of $250,000. Several New York men are interested in the project.

*New York, Gouverneur. B. G. Parker, one of the trustees of the International Lace Manufacturing Co., is about to confer with his co-trustees, D. D. Crouse and C. B. Mason, with reference to the conducting of the corporations affairs. The settlement on a basis of 25 per cent., of the claims of the second mortgage bondholders and the merchandise creditors, which are not secured, cannot, it is said, be brought about because of the conflicting interests among the creditors. It is stated that unless the company's officers make a better offer, the bankruptcy proceedings will be pushed and a thorough examination of the witnesses made.

*New York, Mohawk. A recent report is responsible for the statement that the creditors of the defunct Mohawk Valley Knitting Mills, Ltd., are soon to receive from the trustee a portion of the funds now in the hands of the receiver. It is said that an order will be given soon authorizing the distribution of about $50,000. The receivers have about $90,000 on hand and about $30,000 more in sight, with an expectation that the real estate and machinery will sell at about $50,000. The probability is that the company will eventually pay about 50 cents on the dollar.

New York, Poughkeepsie. The Board of Trade is in touch with a silk manufacturer, reported as operating several plants, who may start a silk mill at this place. The Pelton Mills are being considered as a home for the new industry.

New York, Syracuse. The plant of the Reed Electrical Cordage Company has been purchased by William K. Pierce for $3,005. It is reported that the company will be reorganized with increased capital. The Reed Electrical Cordage Company operated 80 braiders and 100 winders on insulators for use in electrical equipments.

North Carolina, Andrews. A number of prominent men are looking into the advisability of establishing a large cotton mill at this place.

North Carolina, Fearington. There are rumors of a hosiery mill to be organized at this place. Fred Williams is at the head of the organization which proposes to raise the necessary capital. The post-office address is Durham.

North Carolina, High Point. A company is being organized to erect a cotton mill at this place.

North Carolina, Spray. J. S. Patterson, formerly vice-president of the Spray Cotton Mills, has associated with John M. Moorehead and will control the Leaksville Woolen Mill. Mr. Moorehead is president of the latter company.

*North Carolina, Taylorsville. We have been advised that the organization which was to be known as the Broad Shoals Mfg. Co. has not materialized yet and at present prospects for a new cotton mill are not very bright. The report that the company has been chartered with capital stock of $100,000 is erroneous. This is the company in which C. L. Alspaugh, W. L. Moose, L. C. Hafer and others were reported as interested.

North Carolina, Trinity. W. N. Elder, who is reported as interested in the organization of a cotton yarn mill at Randelman, is also interested in the establishment of a knitting mill at this place. The prospects for the successful formation of a company are very good.

Pennsylvania, Allentown. It is reported that the K. & K. Knitting Mills, 6th and Hamilton Sts., manufacturers of misses' ribbed cotton hosiery on 38 knitters, have been consolidated with the Slatington Knitting Co., and the machinery removed to Slatington. It is also said that the Slatington Dye Works, dyers of fast black on hosiery, has been taken over by this company and is now being used as the dyeing department for the knitting mills.

Pennsylvania, Darby. The Salts Textile Mfg. Co. of Bridgeport, Conn., has bought a controlling interest in the Griswold Worsted Co. The transfer will not affect the running of the plant, it is stated, as the Salts Textile Mfg. Co. will use the output of the Griswold plant, which consists entirely of worsted yarns.

Pennsylvania, Philadelphia. The plant of the late firm of Henry Sassman & Co., manufacturers of ingrain carpets on 18 narrow looms, recently declared bankrupts, will be sold out at public auction on October 31, at 1822-28 Cadwalader Street.

Pennsylvania, Philadelphia. The H. A. Romberger Manufacturing Co. of Philadelphia, with a capital of $80,000, has been incorporated to take over the knitting plant now operated by Mr. Romberger at Middletown, Pa. It contains 105 knitters which are run on half hose and ladies' seamless hosiery. The officers of the new company will be elected as soon as the transfer of the plant has been made. The main office of the company is in the Bourse Building, this city. A recent issue of another textile journal announces that this concern will be started in this city under the name of the Philadelphia Hosiery Co. Mr. Romberger states that this is erroneous.

Pennsylvania, Philadelphia. It is reported that the Caledonia Worsted Mills, owned and operated by Alexander Crow at 2212 Noble St., are being operated for six months by the trustees under Mr. Crow's supervision. If the plant does not pay the creditors 55 per cent. of their claims at the expiration of that time Mr. Crow will withdraw his answer to the bankruptcy petition and be adjudicated accordingly. The plant contains eight combs and 14,000 spindles, and is run on worsted yarns.

Pennsylvania, Philadelphia. W. H. Baldwin, who recently purchased the dyeing plant of the E. G. Chester Dyeing Co. at Trenton and Susquehanna Ave., has changed the name of the plant to the Invincible Dyeing and Bleaching Works, and is operating it on sulphur blacks and colors on hosiery. He reports a good business.

Pennsylvania, Philadelphia. The Maynard Mills Co., with a capital of $100,000, W. F. Fray, president; H. H. Bosworth, treasurer, and William Steele, secretary, are very busy operating 60 broad looms on men's wear, which they sell direct. The plant is located at 5th and Columbia Avenue.

Pennsylvania, Philadelphia. The Carlisle Hosiery Co., Kensington Ave. and Huntingdon St., manufacturers of fine cashmere and lisle hosiery on 50 knitters, have recently sold their business to the Wallace Wilson Hosiery Co. of Frankford. The company had a capital of $10,000 with Geo. Gray, president; Wilfred Grey, vice president; Mary A. Evans, secretary; Fred. R. Merbitz, treasurer, and Wallace Wilson, general manager.

Pennsylvania, Philadelphia. A charter has been asked for the Stead & Miller Company, by Wesley Stead, Theodore F. Miller, Theodore M. Hillsley, John W. Snowden, Thomas J. O'Connor and Andrew M. Langwill, the incorporators. The business is now run under the name of Stead, Miller & Co. at 4th and Cambria Sts., on draperies and upholstery goods with 190 looms, with a dye house at American and Huntingdon Sts.

Pennsylvania, Philadelphia. John Watt's Sons, located at Trenton Ave. and Sergeant St., manufacturers of ingrain and granite carpets on 28 looms, with Hugh Watt, Joseph Watt and Frederick Kneibler as incorporators, have applied for a charter for the John Watt's Sons Co., to take over and operate the business.

*Pennsylvania, Philadelphia. The plant of Wm. Rogers & Company, which we reported as running out stock preparatory to closing down in August, will be sold.

Personals.

J. H. Aspinwall, formerly with the DeHaven Mfg. Co., has recently accepted position as traveling salesman for the Dary Ring Traveler Co., of Taunton.

M. J. Coughlin has accepted the position as overseer of carding for the French River Textile Company, Mechanicsville, Conn., he was formerly employed at the Cushman Mills, Monson, Mass.

John E. Tobin, has accepted the position as overseer of weaving for the Stark Mills, Manchester, N. H., he was formerly employed at the Queen City Mills Company, Burlington, Vt.

Kenneth J. Merrell has accepted the position as superintendent of the Naushon Company, Valley Falls, R. I., he was formerly employed at the Monadnock Mills, Claremont, N. H.

William E. Cobbett has accepted the position as overseer of carding for the Jos. Noones' Sons Company, Peterboro, N. H., a position he formerly held.

Alec. Linton has accepted position as boss dyer for the Hope Worsted Co., of Louisville, Ky. The dye house in this plant has recently been fitted out with Vacuum dyeing machines made by the Vacuum Dyeing Machine Co., of Chattanooga, Tenn.

M. W. Marsh has resigned the position as overseer of carding and spinning for the Jos. Simpson & Sons, at Toronto, Ont., Canada, and accepted a position as overseer of spinning for the Brown & Wigle Company of Kingsville, Ont. Canada.

Geo. L. Pope, overseer of carding at the Conshohocken Woolen Mills, Conshohocken, Pa., has resigned and accepted a position as overseer of carding at the Golf Woolen Company, West Conshohocken, Pa.

D. C. Blackwood has accepted a position as superintendent for Frank B. Birch & Sons, Adams and Jasper Sts., Philadelphia, Pa. He was formerly employed at Bordentown, N. J.

Harry Spurr has accepted a position as overseer of spinning for F. A. Strauss & Company of Trenton, N. J.

Albert R. Heritage has accepted a position as superintendent and designer for the Enfield Mfg. Company, Enfield, Mass. He was formerly employed at Clifton Forge, Va.

Geo. W. Burnett a few months ago accepted a position as boss carder with the Savannah Cotton Mills, Savannah, Ga. He has filled similar positions at Millen, Augusta, Ga., and Spartanburg, S. C.

Savannah Cotton Mills, Savannah, Ga., is in successful operation, manufacturing fine hosiery yarn under the supervision of Mr. A. A. MacWhinnie, manager and superintendent. Mr. MacWhinnie has had charge of this plant for 16 months and in that time has brought it to a high state of perfection.

John F. Bagley, overseer of carding in the Chapel Mills Mfg. Co., Cherry Valley, Mass., has resigned to accept a position at the Beaver Brook Mills, Collinsville, Mass.

James L. Fay, for over fifty years employed in the engraving department of the Merrimac Printing Works, Lowell, Mass., died at his home in that city September 25.

Arnold Hudson, an overseer at the Hope Webbing Co., Pawtucket, R. I., on severing his connection with that concern, was presented with a fountain pen by the young women employed in his department.

John Stretton, a member of the firm of Stretton Brothers, manufacturers of knit goods, died at his home in Stoughton, Mass., September 26, after a short illness. He was born in England 57 years ago.

William G. Nichols, late agent China, Webster & Pembroke Mills, at Suncook, N. H., has been appointed general superintendent of the Maryland Division of the Consolidated Cotton Duck Co., with headquarters at Baltimore, Md.

J. E. Fraser, assistant superintendent at the Adams Woolen Co., Maple Grove, Adams, Mass., has severed his connection with that company and is to accept a similar position with the Sawyer Mills, Dover, N. H.

Herbert Shaw, overseer of the mending department of the Wood Worsted Mill, Lawrence, Mass., has severed his connection with that company.

Albert G. Harris, overseer of the No. 2 Mill of the West Warren Cotton Mills, West Warren, Mass., has severed his connection with that company. He is succeeded by Thomas B. Barry of Lewiston, Me.

Julius Bernhard has accepted a position in the designing department of the French River Textile Co., Mechanicsville, Conn.

T. F. Brennan, overseer of carding for the H. T. Murdock Co., Proctorsville, Vt., has severed his connection with that company.

J. S. Fildes, superintendent of the Manchester Woolen Mills, Manchester, Mont., has severed his connection with that company and accepted position as superintendent at East Braidy Mills, East Braidy, Pa.

W. C. Hall has accepted a position as assistant superintendent for the Hind & Harrison Plush Co., Clark's Falls, N. Y. He was formerly employed at Belmont, N. H.

George W. MacGregor, superintendent at the Tillotson Mills, Pittsfield, Mass., has resigned after eight years' service.

M. J. Woodrow, superintendent of the Clinton Mfg. Company, Woonsocket, R. I., was married in Providence, R. I., September 21st, to Miss Claudine Rogers of that city.

Geo. H. Miller, who for several years was engineer of the Local Mills of the American Thread Company, Holyoke, Mass., has been appointed chief engineer.

Thomas W. Sykes, for thirty-four years connected with the North Adams Mfg. Company, North Adams, Mass., has disposed of his stock in the company and severed his connection with the concern. He will go to Rockville, Conn., where he is to be president of the Minterburn Mills. He is also interested in the Hockanum Company.

Fred Swallow, overseer of weaving for the past ten years at the Sawyer Mills, Dover, N. H., has severed his connection with that company.

John Burt, treasurer of the Southwark Mills Company of Philadelphia, Pa., has been appointed to the Board of Judges of that city.

Wm. Grandage has accepted the position as overseer of dyeing for the Manchester Finishing Works, of Philadelphia, Pa. He was formerly employed at the Southwark Mills, 8th and Tasker Sts., Philadelphia, Pa.

Clarence B. Seal, superintendent of the Hawkinsville Cotton Mills, of Hawkinsville, Ga., has severed his connection with that company and is now located in the Northern States.

Frank P. Ladd has been engaged to take charge of dressing for the Airlie Mills, Hanover, Conn. He comes from Madison, Me.

John Menzies has accepted the position as overseer of carding for the Hamlin & Ayres Company of La Chute Mills, Quebec, Canada. He was formerly employed at Perry, N. Y.

John Waugh, overseer of carding at the Reliance Worsted Company, Norwich, Conn., has severed his connection with that company. The position has been filled by David Twohig, who was formerly employed at the Preston Woolen Company.

John D. Bullard has accepted a position as overseer of carding and spinning for S. Prince & Company, Gomez, Palacio, Durango, Mexico. He was formerly employed at Plainville, Conn.

F. W. Kinnish, assistant designer at the Globe Woolen Mills, Utica, N. Y., has severed his connection with that company.

George A. Conklin has resigned the position as superintendent of the Paragon Silk Mill, Paterson, N. J. F. R. Yates, of Oneonta, N. Y., succeeds him.

Charles V. Browne, overseer of finishing at the Chapel Mills Mfg. Co., Cherry Valley, Mass., has severed his connection with that company.

Joseph T. McGowan, overseer of carding at the Chapel Mills, Cherry Valley, Mass., has resigned.

John Furtado, overseer of spinning at the Gosnold Mills Company, New Bedford, Mass., has severed his connection with that company.

Geo. F. Simons has accepted a position in charge of the gigging department for the Bound

Brook Woolen Mills, Bound Brook, N. J. He was formerly employed at Stafford Springs, Conn.

N. J. Perry has accepted a position as second hand in the finishing department of the Somersville Mfg. Company, Somersville, Conn.

Thomas Barry has accepted a position as overseer of spinning for the Warren Cotton Mills, West Warren, Mass. He was formerly employed at Lewiston, Me.

Geo. Worden has accepted a position in the weaving and designing department of the Wauregan Mfg. Company, Wauregan, Conn.

Joshua Cuttle has accepted the position as overseer of dyeing for the Emlenton Woolen Mills, Emlenton, Pa.

O. A. Kinsbury has been appointed overseer of dyeing for the Urbana Woolen Mills, Urbana, O.

Thomas Driscoll has accepted a position with the Beaver Brook Mills, Collinsville, Mass., as boss dyer. He was formerly employed at Penacook, N. H.

Alfred Caron, second hand in the weaving department of the Aldrich Cotton Mills, Moosup, Conn., has severed his connection with that company. His successor is L. T. Healey of Centreville, R. I.

John E. Rogan has accepted a position as overseer of ring spinning for the Lawton Mfg. Company's Mill at Plainfield, Conn. He was formerly employed at Fiskdale, R. I.

Hiram Haynes has accepted a position as boss dyer at the Cushman Woolen Mills, Monson, Mass.

Chas. J. Murray, overseer of ring spinning at the Union Mills, Fall River, Mass., has resigned and accepted a position at Waterville, Conn.

Geo. L. Duffy, for several years agent of the Charles River Woolen Company, North Bellingham, Mass., has tendered his resignation. He will be succeeded by John E. Barber, the present superintendent of the mill.

Thomas Brennan has accepted a position as second hand in the Elizabeth Mills, New Bedford, Mass. He was formerly employed at the Bristol Mills.

Jaird Cockcroft, overseer of the twisting department at the Arlington Mills, Lawrence, Mass., has severed his connection with that company after twenty-seven years of services. John Leach, who has been second hand of this department, has succeeded Mr. Cockcroft.

Oscar O. Shafer has accepted a position at the Rio Grande Mills, Albuquerque, New Mexico, in charge of carding and spinning.

Frank Duffy has accepted the position as overseer of spinning for the Somersville Mfg. Company, Somersville, Conn. He was formerly employed at Wales, Mass.

Thos. Driscoll, boss dyer in the Beaver Brook Mills, Collinsville, Mass., has resigned and returned to his home in Penacook, N. H.

Chas. Kegwin, overseer of the carding department for the Jenckes Spinning Company, Pawtucket, R. I., has severed his connection with that company.

Geo. H. Adams, a former representative in the State legislature and one of the oldest manufacturers of knitting machine needles in this country, died at his home in Franklin, N. H., Oct. 13, in his 62d year.

William Parr, overseer of dry finishing at the Arlington Mills, Lawrence, Mass, has severed his connection with that company after thirty years of services.

Albert G. Harris, who has had charge of the No. 2 Mill of the Warren Cotton Mills, has severed his connection with that company after four years of services. He intends to go to Arizona where he will take up his home.

J. P. McNeill recently accepted a position as superintendent with the People's Cotton Factory, Montgomery, Ala. He was formerly with the Eufaula Cotton Mills, Eufaula, Ala., occupying a similar position.

Frank Henries has secured the position as finished percher at the C. A. Root Mills, Uxbridge, Mass., under overseer of finishing Jos. Shaughnessey.

Edgar Eaton, overseer of carding for the Seneca Falls Woolen Company, has severed his connection with that company. John J. Shea has accepted the position made vacant by Mr. Eaton.

Henry J. Parker, overseer of ring spinning at the Williamsville Mfg. Company, Williamsville, Conn., has severed his connection with that company.

G. Ernest Humphrey, assistant treasurer of the Pontoosuc Woolen Mfg. Company, Pittsfield, Mass., died at the home of his wife's father, aged 29 years. He had been in failing health for about a year, but continued at his work in the office until about a week ago. He was the son of Mr. and Mrs. Geo. Humphrey. He was an expert accountant and a few years ago was elected assistant treasurer.

Morris Holland has been appointed superintendent of the Lancaster Mfg. Company's Mill at the Ponikin district, Clinton, Mass., to succeed his brother James, who was appointed superintendent of the mill at Hudson, Mass.

Ulick Burke has accepted the position as overseer of dyeing for the Wakefield Mfg. Company, Wakefield, R. I. He was formerly employed at Carolina, R. I.

Geo. Everett, master mechanic at the Wm. Clark Mills of the American Thread Company, died at the Rhode Island Hospital after undergoing an operation. He retired from the position two years ago.

Ambrose G. Kenyon, for the past fifteen years employed as foreman carpenter at the Wm. Clark Mills of the American Thread Company, at Pawtucket, R. I., died Saturday, the 12th, at the Backus Hospital at Norwich, Conn.

Lucian Kimball has accepted a position as assistant superintendent at the Peacedale Mfg. Co., Peacedale, R. I.

W. J. Battye has accepted a position as designer for the Coronet Worsted Co., Mapleville, R. I. He was formerly employed at Blackinton, Mass.

J. W. Mercer, overseer of spooling and warping at the Willimantic Mills Corp., has severed his connection with that company.

William Smith, overseer of carding and ring spinning for the Willimantic Mills Corp., Willimantic, Conn., for the past eleven years, has resigned.

Wm. McCulloch, formerly manager of the Paton Mfg. Co., has accepted a position with the Moore Carpet Co., Sherbrooke, P. Q., Canada.

A. Mungall has accepted the position as boss dyer for M. Gambrill at Havre de Grace, Md.

Orlando Saunders for many years agent of the Middlesex Company's Mill at Lowell, Mass., has been appointed agent of the Assabet Mills, Maynard, Mass., one of the American Woolen Company's large mills. Mr. Saunders has been connected with the Middlesex Company for a number of years and is considered one of the most successful manufacturers in the woolen business.

Martin Welch, overseer of dyeing at the Plainfield Woolen Company, Central Village Conn., has severed his connection with that company and accepted the position as overseer of dyeing for Edward T. Steel & Company, Bristol, Pa.

Thomas Horricks has severed his connection as overseer of weaving for the Dwight Mfg. Company, Chicopee, Mass.

J. A. Ring, has accepted a position as overseer of finishing for the Rochester Woolen Company, Rochester, N. H., he was formerly employed at the Sutton Mills, North Andover, Mass.

P. H. Tobin, overseer of finishing for the Morrison Woolen Company, Dexter, Me., has severed his connection with that company and accepted a similar position with the Chapel Mills, Cherry Valley, Mass.

David B. Hart has accepted the position as overseer of finishing for the Morrison Woolen Company, Dexter, Me., he was formerly employed at the Rochester Woolen Co., Rochester, N. H.

John Sheehan, has accepted a position as overseer of weaving at the Sutton Mills, North Andover, Mass., he was formerly employed at the Saugus Mfg. Company, Saugus, Mass.

J. W. Herbert, overseer of the weaving and spinning department of the Greylock Mills, North Adams, Mass., has severed his connection with that company and accepted a position at the Dwight Mfg. Company, Chicopee, Mass.

Abel Cyr has accepted a position as overseer of the spinning department for the Davol Mills, Fall River, Mass., succeeding James Malone.

Thomas Fay has resigned his position as second hand in the weaving department for the Geo. H. Gilbert Mfg. Company, Ware, Mass., and accepted a position at Malone, N. Y.

A. C. Fennell has been promoted to superintendent of the Manchester Mills, Rock Hill, S. C., succeeding W. W. Moore who is now president of the Wymojo Mills at the same place.

George K. Tate has accepted the position as superintendent of the Mecklenburg Mills, Charlotte, N. C. He was formerly employed at the Arlington Mills, Gastonia, N. C.

G. L. Hope has resigned the position as carder and spinner at the National Cotton Mills, Lumberton, N. C., to accept a position as overseer of carding at the Hannah Pickett Mills, Rockingham, N. C.

G. W. Wilson has accepted the position as chief engineer and master mechanic at Barnesville, Ga.

T. M. Costello is overhauling the carding and spinning machinery at the Wiscassett Mills, Albemarle, N. C.

W. N. Wilson has accepted the position as night superintendent at the Avon Mills, Gastonia, N. C.

J. W. Lynn has been promoted to the position as overseer of weaving in the Dover Mills, Pineville, N. C.

M. T. Petty has taken charge of the spinning, twisting and warping at the Avon Mills, Gastonia, N. C.

Marcus Turdyfield has taken charge of the Arcade Mills, Rock Hill, S. C.

D. F. Poole accepted the position of boss weaver with the Eastman Cotton Mills, Eastman, Ga., about four months ago.

McD. Mauldin, formerly with the Isaqueena Mill, Central, S. C., is at present with the Eastman Cotton Mills, Eastman, Ga. He accepted the position of boss carder and spinner the forepart of September.

J. H. Mayes resigned as superintendent of Mayes Mfg. Company, Charlotte, N. C., and accepted the position of superintendent with the Fitzgerald Cotton Mills, Fitzgerald, Ga., September 1. He was formerly superintendent of this mill, having charge several years.

W. H. Murray, who has been superintendent of the Hawkinsville Cotton Mills, Hawkinsville, Ga., for a number of years, in fact started the plans and resigned March, 1907, has again accepted the position the forepart of August.

E. A. Holt, overseer of carding, spinning and winding at the Dresden Cotton Mills, Lumberton, N. C., has resigned and accepted the position as overseer of spinning and winding at the Hannah Pickett Mills, Rockingham, N. C.

F. Hamilton has resigned the position as superintendent of the Darlington Cotton Mills, Darlington, S. C., and accepted the superintendency of the Dayton Cotton Mills.

S. L. Duggett, overseer of dyeing at Fulton Bag & Cotton Mills, Atlanta, Ga., severed his connection with that company and accepted a similar position with the Camperdown Mills, Greenville, S. C.

G. A. Franklin, superintendent of the Dayton Cotton Mills, Dayton, S. C., has resigned and accepted a similar position with the Walhalla Cotton Mills.

I. K. Edwards, overseer of spinning at Greenwood Cotton Mills, has accepted a similar position with the mill at Union, S. C.

J. S. Patterson, vice president and general manager of the Spray Cotton Mills, has resigned after eleven years' service.

Herman Dawson has accepted a position as superintendent of the woolen mill at Spray, N. C. He was formerly connected with the plant at Basic City, Va.

J. C. Montjoy, overseer of weaving at Grendell Mills, Greenwood, S. C., has resigned and accepted a similar position with the Calhoun Falls Mills.

I. W. Wright, superintendent of the Clinton Cotton Mills, Clinton, S. C., has resigned and moved his goods to Spartanburg, S. C.

D. E. C. Clougher, formerly night superintendent at the Dillon Mills, is now overseer of spinning and twisting at Fidelity Mills, Charlotte, N. C.

Alexander H. Downs, a prominent mill man of Manchester, N. H., died at his home in that city, Oct. 22, at the age of 81 years.

Henry W. Clark has accepted the position as overseer of carding in mill No. 3 of the Willimantic Cotton Mills, Willimantic, Conn.

Daniel Cremin has been appointed overseer of carding in Mills No. 1 and 2 of the Willimantic Cotton Mills, Willimantic, Conn.

The overseer of the Charles River Woolen Company at North Bellingham, Mass., presented a handsome traveling bag to the retiring agent, Geo. E. Duffy, who recently resigned his position. The presentation speech was made by John E. Barber, who succeeds Mr. Duffy as agent.

Thomas Hopkinson, who resigned his position as assistant superintendent and dyer at the Sanford Department, of the New England Cotton Yarn Company's Mill, Fall River, Mass., in July, to take a much needed rest, left New York, Oct. 22, on the steamship Caronia to spend a year in rest and recreation in the British Isles and continent.

W. E. Tisdall, formerly boss carder at the Estella Cotton Mills, Selma, Ala., has accepted a position as assistant superintendent with the Cawthon Cotton Mills, Selma, Ala.

Geo. W. Turnipseed, formerly carder at Gaffney Cotton Mills, and later assistant superintendent of the Tallassee Falls Mfg. Company, Tallassee, Ala., is now superintendent of the La Grange Mills, La Grange, Ga.

William Thinert, overseer of spinning at the Pawcatuck Woolen Mills, Potter Hill, R. I., has resigned and the position has been taken by Ambrose Brooks of Maynard, Mass.

S. H. Fawthrop has accepted a position with the Industrial Dyeing & Finishing Works, Philadelphia, Pa., he was formerly employed at the Merrimack Mfg. Company, Lowell, Mass.

Jeremial Collanen has accepted the position as overseer of dressing for the Moosup Mills, American Woolen Company, Moosup, Conn. He was formerly employed at the Beoli Mills, West Fitchburg, Mass.

Wm. E. Davidson, formerly superintendent of the Calumet Mills, Uxbridge, Mass., has accepted the position as superintendent of the Somerville Mfg. Company, Somerville, N. J.

David Haufman has accepted the position as overseer of finishing at the Keystone Underwear Company, Lititz, Pa.

Jos. Norzinski has accepted the position as overseer of knitting for the Harding Knitting Company, Brockton, Mass.

John Dent, overseer of the cloth department for the Capital City Mills, Columbus, Ga., has accepted a similar position at the Pine Creek Mills, Camden, S. C.

John H. Gormerly designer at the Manton Mills, of the American Woolen Company, Manton, R. I., will accept a similar position with the Terry Mfg. Company, Waterville, Me.

Walter M. Oliver, superintendent of the C. A. Root Company's Mill at Uxbridge, Mass., has severed his connection with that company.

Warren Thompson, overseer of spinning at the Cox Mills, Anderson, S. C., has resigned and accepted a similar position with the Grendel Mills of Greenwood, S. C.

Geo. Yusbee has accepted the position as overseer of weaving at Warrenville, S. C. He was formerly employed at the Harmony Grove Mills, Commerce, Ga.

F. C. Lawhon has accepted a position as overseer of the cloth room at Cooleemee, N. C.

J. D. Lockey has accepted a position as superintendent of the Gainesville Cotton Mill, Gainesville, Ga. He was formerly employed at Belton, S. C.

V. M. Johnson has accepted a position as overseer of weaving at the Avondale Mills, Birmingham, Ala.

L. Bochofen has accepted a position as superintendent of the Paragon Silk Company, Paterson, N. J.

Thomas W. Harvey has accepted the position as superintendent with the Prattville Cotton Mills, Prattville, Ala. He was formerly employed in a similar position with the Manchester Mfg. Company, Macon, Ga.

Arthur Smalley has severed his connection with the Lancaster Mills to accept a position at the Barnaby Mfg. Company, Fall River, Mass., as head designer.

Nelson H. Marsden, formerly overseer of spinning at the Montreal Cotton Company, Valleyfield, Que., Canada, has accepted a position at the Utica Cotton Company at Capron, N. Y.

Thomas Duggan, overseer of spinning at the Gosnold Mills, New Bedford, Mass., has severed his connection with that company.

L. R. Hagood, cashier for the Charlotte Trust Company, Charlotte, N. C., has resigned and will assume the management of the Lula Mfg. Company Cotton Mills at King's Mountain.

F. H. Reffelt, five years superintendent for the Menasha Woolen Mills, Menasha, Wis., has severed his connection with that company.

W. A. Pierce has accepted a position as overseer of carding for the Eufaula Cotton Mills, Eufaula, Ala., he was formerly employed at Eastman, Ga.

DEATHS.

George A. Chace, since 1881 treasurer of the Bourne Mills, Fall River, died suddenly at a sanatorium in Attleboro, where he had been a few weeks on account of ill health. Mr. Chace was widely known throughout the cotton industry in connection with the profit-sharing system, which he advocated and put into operation at the Bourne Mills in 1889, and which has continued up to the present time with apparently satisfactory results to stockholders and operators. The Bourne Mills has been a very successful concern, and Mr. Chace was an able mill manager. He was born in Somerset, Mass., in 1844, served two years in the Third Massachusetts Infantry in the Civil War. In 1874 he was elected treasurer and manager of the Shove Mills continuing with them until 1884. He was interested in many philanthropical works.

George S. Silsbee, treasurer of the Pacific Mills, Lawrence, Mass., died at West Peabody from injuries received while riding horseback with his wife in the vicinity of their home in West Peabody. The horse that Mr. Silsbee was riding slipped, fell and rolled, crushing the rider. He was removed to his home where he failed to rally from the injuries and his death followed. He is survived by his wife, one son and a daughter He was 55 years of age.

John Allen, agent of the Assabet Mills at Maynard, died of injuries received in an automobile accident. The car in which he was riding, together with Mr. Joseph T. Shaw, of the American Woolen Co., and Ralph Whitehead, overseer of weaving at the Assabet, was overturned. Mr. Whitehead, who was also seriously injured, is reported on the road to recovery. He is still at the Waltham Hospital.

Alverado D. Barker died at his home, 408 Main St., Lewiston, Me., September 29. He was born June 29, 1849, in Saco, Me. He had graduated from the Lawrence High School and later attended the North Bridgeton Academy. In 1865 he removed to Philadelphia and took charge of a large cotton mill. He was afterwards appointed agent of the Hallowell Mfg. Co., later removing to Holyoke and accepting position with the Hampton Cotton Mills.

Ernest Pretty, local agent for the American Thread Co., residing at 827 Blair Ave., Avondale, who was injured in an elevator accident, died September 22 at the city hospital. He is survived by a widow and three children.

Maj. John A. Fant, president and treasurer of the Monarch Cotton Mills at Union, S. C., and one of Union's most prominent men, died at his home in that city September 24. He had been in ill health for several weeks.

Richard B. Hathaway, for a number of years master mechanic at the Durfee Mills, Fall River, Mass., died at his home in that city. He is survived by three sons and three daughters.

Albert E. Gould, employed as clerk at the Arnold Print Works, North Adams, Mass., dropped dead in the office of that company October 9th. He was 40 years of age. He had been employed at the Print Works since 1896 and was one of the valued employes of the large office force. He leaves a wife and one daughter.

Edward H. Leavitt, overseer of the carding department at the Pepperell Mills, Biddeford, Me., died October 5th at his home, 40 Sullivan St., at the age of 83 years. He had been in ill health for some time. Is survived by a daughter and three sons.

Thomas Macken, for a number of years overseer of finishing for the Hinsdale Woolen Co., Hinsdale, Mass., died at Leavenworth, Kan. He was 68 years of age. He was also employed a number of years ago in mills in Pittsfield, Mass.

Wm. H. De Forrest, a prominent silk manufacturer of Paterson, N. J., and New York City, died suddenly at his home in Summit, N. J., at noon yesterday. He was the vice president of the Upland Silk Company of this city. With his brother, Othneil De Forrest, he conducted the Summit Silk Company, in his home town, and also controlled the Palisade Silk Mills in Bergen County. The deceased was attending to business at the headquarters in New York City on Thursday. When he reached home late in the afternoon he was seized with a severe attack of acute indigestion, which caused his death.

William H. Tooher, aged 67 years, died October 11th at his home in Hyde Park, Mass. He came to this country in 1864 and has been engaged as boss dyer in several mills throughout the country, among them A. T. Stewart's Mill, Utica, N. Y., and Robert Bleakie Co., Hyde Park.

Francis J. Murphy, overseer of finishing of the Forestville Mills, Stafford Springs, Conn., died recently at his home in that town, aged 39 years. He had been seventeen years overseer at this mill. Previous to that time he was employed at Pittsfield, Mass. His body was taken to Pittsfield for burial.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

British Weights and Measures Association, Third Annual Report, 98 Cannon St., London, Eng.

This pamphlet contains a report of the discussion of the metric system before the Colonial Conference at London last April in which the Chancellor of the Exchequer after stating that he had formerly been an advocate of the change to the metric system said that he had changed his opinion and now had doubts of the wisdom of interfering with our established standards. He referred to the protest against the metric bill by the textile operatives and employers and called it a most remarkable demonstration from the whole of that industry. Copies of this report can be obtained from J. P. Murray, 445 Euclid Ave., Toronto, Canada.

Universal Technical Lexicon (Lexikon der gesamten Technik); by Otto Lueger; Parts 21, 22, 23, 24 and 25; Deutsche Verlags-Anstalt, Stuttgart, and Leipzig, Germany. Complete in 40 parts. Price of each part $2.00.

The latest parts of this work to come from the press complete the fifth volume and end with the article on couplings. The illustrations are especially noteworthy and form a valuable addition to the text. A feature that will be greatly appreciated by students is a list of books given under the principal subjects, facilitating further investigations.

Life and Labor in Germany; Reports of the Gainsborough Commission; 286 pages, 5 1/4 by 8 1/4; Simpkin, Marshall, Hamilton, Kent & Co., London. Price $1.00.

This book consists of a series of reports by a commission sent from England to Germany by C. Algernon Moreing to study industrial conditions in the latter country. Mr. Moreing's object in sending this delegation was to counteract the effect of reports circulated in England regarding the German work people. The commission had letters of introduction from British merchants and manufacturers and officials of the British government. The tour lasted six weeks. After making a certain allowance for the unavoidable bias in reports compiled in this manner it must be admitted that the volume contains a large amount of valuable data bearing on German conditions; to those in other countries who are familiar with the conditions at home it enables valuable comparisons to be made. There are fifteen reports relating to the districts of Crefeld, Rheinhausen and Essen, Bochum and Dortmund, Elberfeld, Solingen and Dusseldorf, Cologne, Leverkusen, Hoechst and Ludwigshafen, Frankford-a-M., Nuremburg and Augsburg, Plauen, Chemnitz, Lunzenau, Crimmitschau, Leipzig, Dresden, Berlin, Hamburg and Upper Silesia, with an appendix relating to the system of infirmity and old age pensions in Germany. The work is especially interesting to American readers owing to the present unsettled state of our commercial relations with Germany.

Cotton Movement and Fluctuation; Latham, Alexander & Co., New York.

The thirty-fourth annual edition of this well-known handbook has been brought to date and gives statistics and general information regarding acreage, cotton movement, consumption, production and quotations, visible supply, weights and weather conditions for a series of years. It is a very attractively bound volume and the contents are well arranged, enabling easy reference to be made to any desired subject.

Hendricks' Commercial Register of the United States; 1,224 pages, 7 1/2 by 10; S. E. Hendricks, 74 Lafayette St., New York City. Price $10.00.

This work contains, it is stated, 350,000 names and addresses of leading firms in the United States classified according to states and lines of business, covering the building, engineering, mechanical, railway, electrical, mining, iron, steel, export, and allied industries. The classification adapts it for use for either purchasing or mailing purposes. The publishers of this work state that they make no charge to the firms whose names are given in it, the object being to make the list as complete as possible for the benefit of the reader. Their general system, which applies to all lines of business, the publishers illustrate by reference to "Machinists and Founders." Every firm that has a machine shop or a foundry is put under that head for mailing purposes, and then is subclassified under other headings that cover every variety of its product. This is to adapt the work to both buyer and seller.

Business Literature.

The Crawford Press; Spence & Rideout, Nashua, N. H.

A 24-page catalogue in which are illustrated and described various types of presses including the heavy hydraulic press, triple plunger geared hydraulic pumps, a quick working press and a double screw press specially adapted for knit goods and hosiery, douple plunger pumps, power screw presses, fender boards, press papers and press paper heaters. A list of mills in which these presses are in use and a number of testimonial letters are also included. A copy will be mailed on request to the manufacturers.

Dusters, Willows and Openers; C. G. Sargent's Sons Corp., Graniteville, Mass.

A catalogue devoted to the subject of dusters, willows and openers, which is profusely illustrated with different views of the various types of machines they build. They have specialized in this class of machinery, and different models are adapted to all the various requirements of woolen mills, cotton batting plants, knitting mills, worsted mills and cop manufacturers, as well as wool scourers and carbonizers, shoddy manufacturers, etc.

Information for Dyers; American Society of Dyers, Philadelphia, Pa.

This volume contains the history and the constitution and by-laws of the American Society of Dyers, organized in 1896. There are also a number of tables and articles relating to dyeing.

Perpetual Catalogue of Heating, Ventilating, Drying, Fans, Blowers and Engines. Massachusetts Fan Co., Watertown, Mass.

A 100-page catalogue which is practically a handbook of cuts, dimension tables, capacity tables, engineering tables and notes explanatory of heating, ventilating, and similar equipments. In addition to explanations and data pertaining to the manufacture of the Massachusetts Fan Co., a quantity of data and engineering tables are given, which, it is stated, have not been published heretofore. The catalogue is of suitable dimensions for carrying in the pocket.

It is the intention of the Massachusetts Fan Company to send pages of new matter, notably their new ball bearing for fans, to holders of the catalogue thus keeping it up-to-date. The new leaves will be punched so they may easily be inserted in the cover or binder of the catalogue. This novel catalogue handbook will be sent on request to interested parties.

Heating Boiler Feed Water Where the Main Engine is Run Condensing; Harrison Safety Boiler Works, Philadelphia, Pa.

In this pamphlet it is shown that by using the exhaust steam of boiler feed pumps, circulating pumps and air pumps for preheating the boiler feed-water, the efficiency of these pumps becomes much higher than that of the best triple-expansion, condensing engine. At the same time, steam-driven machines of this character are much less expensive in first cost and the cost of attendance, are less liable to get out of order and may be operated when the main engine is standing idle, which, of course, is not the case with directly-connected or electrically-driven auxiliaries. The illustrations and text cover the engineering phases of the subject, including methods of operating barometric and surface condensers, the effect of air in the condensers of steam turbine plants, description of a typical street railway power plant, etc. Copies of this booklet will be supplied upon application to the manufacturers.

Trimmings for Underwear.

E. R. Rickman, who is widely known among knit goods manufacturtrs, having been associated with Mr. George W. Kavanaugh in his Utica Branch, has gone into business for himself with headquarters at 54 Leonard St., New York City. He is a converter of cotton piece goods and trimmings for knit underwear, and will carry in stock a full line of threads, tapes, braids, buttons, sateens, silesias, cambrics, domets and cotton yarns.

Schuchardt & Schuette.

Attention is called to the announcement of Schuchardt & Schuette, 136 Liberty St., New York, who are agents for an extensive line of textile finishing machinery. Ernst Mueller is manager and C. M. Hoffschmidt is assistant manager of the company. They have made a careful investigation of many European textile machines and have secured the agency of a number of the most successful of these appliances.

Woolen and Worsted Overseers.

Office of the Secretary,
Clinton, Mass., Nov. 1, 1907.

The twenty-fifth annual meeting of the N. A. of W. & W. O. will be held at the American House, Hanover Street, Boston, Mass., on Saturday, November 16th, at 10 p. m. sharp. Reports of the secretary and treasurer will be read, and other business of importance; also the recommendation of Brother C. A. Kennedy that a committee of three be appointed to look into the advisability of establishing a scholarship at one of the textile schools, the money to be raised by the association; this committee will report at this meeting.

The following were nominated for officers at the May meeting, election to be made at this meeting. Applicants for membership will not be allowed to attend this meeting under our laws passed in May, 1906 For president, James McDowell, of Providence, R. I.; James E. O'Kell, of Pascoag, R. I.; George W. Gerry, of Collinsville, Mass. For first vice president, James McDowell, of Providence, R. I.; James Rea, of Cherry Valley, Mass.; James O'Kell, of Pascoag, R. I.; F. P. Gallagher, of Woonsocket, R. I.; Second vice president, James H. Pickford, of Clinton, Mass. Third vice president, Thomas Gordon, of Whipple, R. I.; F. P. Gallagher, of Woonsocket, R. I.; Joseph Schofield, of Uxbridge. For secretary, Walter Pickford, of Clinton, Mass. For treasurer, Thomas Buchan, of Hyde Park, Mass. For secretary, beneficiary department, George W. Burr, of Chicago, Ill. For treasurer beneficiary department, Thomas Buchan, of Hyde Park, Mass. For trustees, John Thornton, of Chepacket, R. I., Eleazar Davies, of Plymouth, Mass., Louis Carmack, of Providence, R. I.

At the invitation of the association, Charles H. Morse, secretary Mass. Commission on Industrial Education, who wishes us to co-operate with them, will be at the meeting at three o'clock, to explain his plan. Banquet, free to members, will be served promptly at 1 p. m.

George W. Gerry, President.
Walter Pickford, Secretary.

Free Engineering Library to Open Evenings.

On and after Wednesday, November 6, 1907, the reference libraries of The American Institute of Electrical Engineers, The American Society of Mechanical Engineers, and The American Institute of Mining Engineers, 29 West 39th Street, New York, will be open evenings until nine o'clock on all week days except public holidays.

These libraries, constituting practically one library of engineering, situated near the New York Library in the new headquarters of the engineering societies, are available to members of the above societies, engineers, and the public generally, subject to proper regulations. Strangers are requested to bring letters of introduction from members or to secure cards from the secretaries of the respective societies.

Inspect the "Sea Lion."

If the statement had been made no further back than three or four years ago that there was such a thing as a guaranteed waterproof leather belt, warranted to actually run in water and steam without deleterious effect, it would have been received with incredulity, if not derision, but that such a belt has been perfeced it would be difficult to deny in the face of the very practical, and in fact severe demonstration now being made at the Jamestown Exposition by the Chicago Belting Company, of Philadelphia and Chicago.

This company realized that the display of a single belt running under artificial conditions and without strain, would lack impressiveness and might indeed excite suspicion as to its genuineness, and determined that the nature of their exhibit should be such as to convince the skeptical.

To this end they erected in the Machinery and Transportation Building, a small, but very good imitation of a planing mill, installed a huge planer and matcher, and belted it up entirely with their now well-known "Sea Lion" waterproof leather belt. This heavy machine is operated by a 10 h. p. Allis-Chalmers motor (loaned for the exhibit) and both planer and belts are subjected continually to a regular torrent of water from perforated piping overhead.

The demonstration is truly a convincing one, as to the practicability of using leather in such places as bleacheries, paper mills, dye houses, starch factories, saw mills, and in fact in wet or damp places where the use of substitutes has heretofore been compulsory.

Conspicuous among the many plants of this class completely equipped with the "Sea Lion" waterproof belt is that of the National Starch Company, Oswego, New York. In this mammoth plant, the "Sea Lion" belt has superseded rubber, which was formerly used, and which was found to disintegrate under the influence of heat and moisture, and foul the product.

The American Society of Mechanical Engineers will hold its next regular monthly meeting on Tuesday evening November 12, at 8.15 o'clock, in the building of the Engineering Societies, 29 West 39th Street, New York.

The principal address will be made by Charles R. Pratt and will treat of features of construction and operation of the gearless traction electric elevator, which is being installed in the Singer and Metropolitan Life, New York's two highest buildings. The paper will be discussed by engineers and architects from New York, Philadelphia and Chicago. Members of all professions are cordially invited to attend.

Barnegat Bay.

The General Passenger Department of the Central Railroad of New Jersey has issued a little booklet descriptive of the attractions of Barnegat Bay, on the Jersey coast, a sporting paradise for the angler, the hunter and the yachtsman. Convenient alike to Philadelphia and New York it offers many attractions for an autumn outing, and this booklet tells just what a man wants to know about the place.

Twenty-Five Years of Business Life.

The employes of H. A. Metz & Co. commemorated the completion of the first quarter century of the business career of H. A. Metz by a dinner to that gentleman at the Waldorf-Astoria, New York, Oct. 22. C. L. Gagnebin, manager of the Boston branch of the company, presided, and introduced E. A. Widmann as toastmaster. A silver loving cup was presented to Mr. Metz, and in making the speech of presentation Mr. Gagnebin gave fitting expression to the high esteem in which every employe of the company held the guest of the evening. They all took genuine pleasure in honoring him not only as a fair-minded employer, but as a capable business man of unbounded energy, whose business career from office boy to the head of the firm was an inspiration to all of them.

In his reply Mr. Metz showed plainly how deeply he was affected by the expression of good will from those in his employ. Speeches were made by C. M. Patterson, F. H. Elmore, Charles Fuehrlein, C. D. Green, G. A. Stevenot, Dr. J. W. Wainwright, Alfred Pollack, H. S. Neiman and A. R. Andrae, the last named gentleman speaking in German. The ices were served in receptacles patterned after the one-pound aniline cans used by the company and labeled "Patent Blue." The menu bore a photograph of Mr. Metz and four cartoons representing epochs in his career. The first, in 1882, showed him as an office boy, too small to reach the post-office box, and being lifted up by a burly policeman so he could get the mail. In the second he was seen as a student of chemistry at Cooper Union in 1887. An explosion in the laboratory was scattering retorts, bottles, test-tubes, tables and Mr. Metz in all directions, fortunately without results that interfered with his subsequent career of success. The third cartoon showed the guest of the evening a traveling salesman in 1892. As a matter of fact he had stopped traveling as his horse had dropped dead. Seated on the carcass he is seen with the wagon in the background, and his memorandum of traveling expenses to Schulze-Berge and Koechl before him, in which appears the item, "One dead horse, $30." The fourth cartoon brings this eventful history to the year 1907. Mr. Metz here stands at a telephone and, while receiving a message, a boot-black is polishing his shoes, a politician is making some appeal, a fair representative of the woman's rights party is presenting a petition, while the captain of a juvenile base-ball team is receiving a check to pay for uniforms from the busy Comptroller of New York.

The following employes of the firm were present to greet Mr. Metz:

Members of branch offices: C. L. Gagnebin, Boston, Mass.; F. H. Elmore, Providence, R. I. C. D. Green, Philadelphia, Pa.; G. A. Stevenot, Charlotte, N. C.; A. R. Andrae, Chicago, Ill., and Alfred Pollack, Montreal, Can. Other employes: C. M. Patterson, Chas. Fuehrlein, E. G. Goullaud, O. Friedlander, G. A. Anderson, E. Montalent, A. F. Wiehl, John Watters, J. Haggerty, A. H. Hein, A. L. Hack, H. S. Neiman, E. A. Widmann, P. Schulze-Berge (son of P. Schulze-Berge, Mr. Metz's first employer), J. R. Roether, Jos. P. Jaeck, Gus. Metz (brother of Mr. Metz), Gus. Weismann, W. C. Ball, McL. Fyfe, H. Stoeber, P. Fries, P. V. Volkes, W. Dingy, E. W. Wenicke, F. H. Grunzig, P. S. Clarkson, J. M. Kreidel, O. F. Poetszch, G. H. Alpers, J. P. Hammond, A. N. Kuegel, O. Sipermann, Dr. J. W. Wainwright, W. C. Pollack, W. Kielholz, H. L. Heddin, O. Shuttenberg, J. C. Wichmann, Wm. C. Robb, T. Saltkeld, A. Weyer, W. B. Bartlett, N. B. Thayer, E. Toennis, M. Murtha, Wallace Wilson, Joe Oster, John Reitscky, Val. Voelker, H. Zimmerman, W. H. Rose, Adam Vitter and Andreae Reitscky.

A Successful Spool Dyeing Machine.

L. H. A. Schwartz & Co., 141 Milk Street, Boston, Mass., report that they are having great success with the Erckens & Brix cross spool dyeing machine. Within the past few months they have made a number of new sales, and most important evidence of the satisfaction given by the machine is shown by a number of repeat orders from important concerns.

Trade-Mark Paper.

The Chas. Beck Paper Co., Ltd., 607 Chestnut St., Philadelphia, are introducing a novelty in the paper line in the way of specialized name or trade-mark paper. There has been a rapid growth in the custom of trade-marking textile goods, and this new idea permits the manufacturer to buy paper with his name or trade-mark on it at a price as low as the cheap white glazed paper. The manufacturers will also make designs if desired. They carry a large assortment of shades and colors to choose from, and will be pleased to submit samples on request.

Steam Turbines for Textile Mills.

Among the noteworthy features of the textile industry, this fall, has been the ordering of steam turbines, of the improved type built by Allis-Chalmers Company, for installation in some of the largest mills of New England and the Central and Southern States. Power machinery of that company's build has long been prominent throughout the country in manufacturing plants of every description; and, in the electrification of textile mills, Allis-Chalmers steam turbines and generators, as well as its induction motors for alternating current, are now playing a leading part. Contracts recently awarded by textile manufacturers include three turbines for the new 10,000 h. p. plant of the Pacific Mills, Lawrence, Mass., one of 2,200 h. p. for the American Thread Company's Watuppa Mills, one of 3,000 h. p. for the Tremont & Suffolk Mills, and machines of 800 h. p. each for the Jamestown Worsted Mills and Cherry Cotton Mills.

These turbines are of the same general type as the machines installed on the now record-breaking liners Lusitania and Mauritania.

E. E. Aspinwall, who is well known to the textile trade, is now with the Arabol Manufacturing Company, 100 William Street, New York. He will represent that concern in the East and the middle West.

Labor Information Office for Italians.

Italian immigration into the United States has grown rapidly in the last twenty-seven years. It was only in 1880 that the number of Italian immigrants coming into this country exceeded 100,000 (123,054) and from that time Italian immigration has constantly increased. During the fiscal year ending June 30, 1905, it reached 273,100, taking the head of the column of the different nationalities which contribute to form the large stream of immigration to this country.

The larger percentage of Italians coming into the United States are ignorant, as they come from the less progressive provinces of Italy, and it is rare that any are found who understand English. These people are not alone ignorant, but very poor, so poor that they must find work immediately upon landing, in order to live.

But they come into a country which for its economic development is in constant need of a powerful army of workers, a country in which the demand for workers is ever large, and yearly increasing.

From the ignorance and poverty of these Italians and the need of workers arise the necessity of agents to act for them in negotiations with people who would employ them; and these agents, almost without exception, take advantage of their ignorance and poverty and of the necessities of American employers by charging exorbitant fees both to the laborers and to the people employing them. At the presnt time some of these agencies are charging only the applicants for work, not the employers. In one way or another they always manage to exploit the new-comers.

Struck by this condition of affairs some American gentlemen last year decided to form an organization for the purpose of creating a free labor bureau, whose first aim would be to act as an intermediary between those seeking employment and those who would employ them. These gentlemen are Augustus Healy, New York; Giovani Morosini, banker of New York; the late J. Ratti, Bloomsburg, Pa.; Joseph Tuoti and C. A. Aimone.

The manager of the office, G. Di Palma Castiglione, states that "the office was opened in April, 1906, at its present address, 59 Lafayette Street, and from the date of its opening to September 1st, it had secured employment for over 8,500 persons. During the same period 1,113 employers made application for help, and over 9,162 Italians were advised as to the conditions of work, wages, etc.

"It must be remembered that the organization is as yet but little known among the Americans; but it is hoped that in the not very distant future the number of employers applying to the Labor Information Office for Italians will be greatly increasing.

"The office has still another aim which is of national interest; the distribution of the new-comers throughout the United States.

"It is well known that most of the Italians living in this country are in the larger cities of the East; while they would be of much better use to their new fatherland if they would go to Western and Southern agricultural regions.

"The Labor Information Office for Italians does its best to assist any who express a desire to devote themselves to agricultural pursuits, giving them detailed information in regard to most suitable sections of the various states. Great results from this branch of the work cannot be expected, because the financial circumstances of Italian immigrants prevent them from grasping all the opportunities that the United States offers to those willing to become farmers. The extreme poverty of the immigrants prohibits their buying lands and waiting for crops to grow; for they must live in the meantime.

"Notwithstanding this, we hope in time to succeed in placing a good number of the new-comers in the agricultural district of the United States."

The Expansion of the Jute Trade.

The recent final forecast by the Indian Government, of a total crop of 9,000,000 bales of jute, directs attention to the present condition of the jute industry. To those who have followed the trade for any considerable time, the prosperity of this particular industry in recent years is well known; but to the general public it may not be out of place to direct their notice to a great change in recent years. Jute is our cheapest textile, and not so long ago a crop of three to four million bales was sufficient for the world's requirements. Dundee was for long the centre of this trade, but by degrees Calcutta shot ahead. As a result, the Indian capital now uses about one-third of the jute crop grown at her own doors, while extensions on the Continent are also considerable and significant. Thus we have to admit that "Bonnie Dundee" is not now the power she once was in the jute trade.

A few years ago the general condition of the industry in both India and Scotland was far from satisfactory; but the recent great war in the Far East caused an enormous demand for jute goods, and all the markets were soon bare of stock. Raw material advanced steadily in price, and the same quality of jute that used to be sold at about £10 per ton was purchased last month at £28 and we are not likely to see really cheap rates again for a considerable time. Last season opened at moderate prices, but month by month the demand for jute cloth—consequent on splendid crops in all parts of the world—increased, and spinners and manufacturers found that their returns were such as they had not known for years. Even Dundee, long so depressed, had a most successful year, spinners in particular having done well, while for the first time in twenty years mill extensions became possible. The extreme price of jute during the summer months caused anxiety, and the continued rise, even after the first forecast made spinners uneasy about the future. Demand was quiet, but the outlook is now much brighter. The second or final forecast is more favorable than expected, and jute for future is £5 down from the top. Spinners are so far foresold in yarns that any fall in price is likely to be gradual, and with an improving cloth demand the prospects are that, with cautious buying, the coming winter will bring good trade. The growing wants of the world have told on the industry, and with increasing outlets and new use for this cheap fabric, one may expect even better trade in the future.

As far as Dundee is concerned, the great question is that of adequate supplies. Calcutta's position gives her a vast advantage; but if the trials being made in Africa and elsewhere should increase the supply of raw material, so as to cause a saving in carriage and a reduction in price, our Scottish neighbors may see still better days before them.—Textile Mercury.

The Westinghouse Companies.

The appointment of receivers for several of the Westinghouse Companies, including the Westinghouse Machine Co. and the Westinghouse Electric & Mfg. Co., need give no apprehension to parties doing business with these companies. The action was deliberately and thoughtfully taken as a sensible and logical measure for conserving the interests of the customers, creditors and stock holders of solvent institutions which are doing a large and profitable trade.

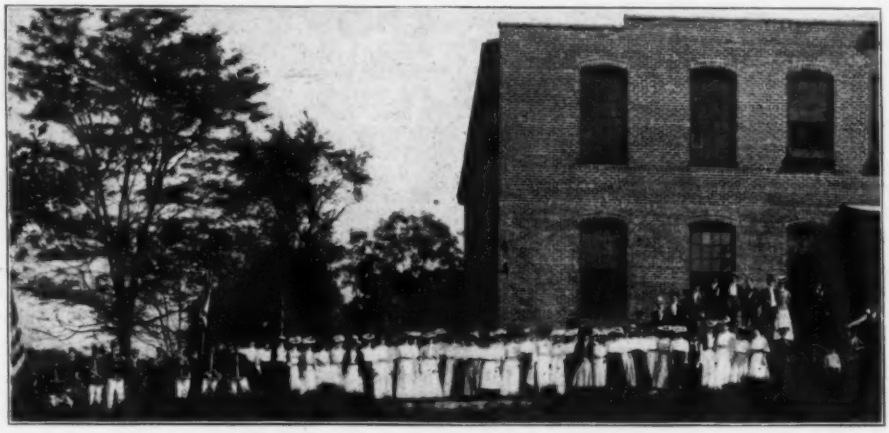
The receivers, after examination of the property, state that the companies are suffering from nothing more serious than a very rapidly growing and profitable business. This necessitated the use of considerable borrowed capital and credit, and the financial stringency made it wise to place the business temporarily in the hands of receivers, so that no interruptions to the operations of the company need ensue.

There has not been any pause in the operation of the company. They are busier than at any time in their history. They are ready to receive orders and to give them the same attention as before. There will be no departure from the general policy that has hitherto obtained, nor any change in the personnel, and the receivers will, during their temporary charge of affairs, spare no pains to foster and obtain the cordial relations that have always existed between the Westinghouse Companies and their customers.

Magnet Knitting Mills.

An annual outing was given to their employes by the Magnet Knitting Mills of Clinton, Tenn., last month. The employes were escorted by the Clinton band through the streets of Clinton to the picnic grounds at McAdoo Springs and were photographed on the line of march. Those in the procession consisted mainly of young ladies dressed in white and each carrying a badge inscribed "Magnet Knitting Mills." All enjoyed the outing and were loud in their praises of the mill managers who so generously made arrangements for the affair.

These mills manufacture the well-known brand of Ma-Knit hosiery, the officials of the company being S. N. Leith, president, Paul F. Vogel, general manager, and W. W. Underwood, secretary.



THE MAGNET KNITTING MILLS AND THEIR EMPLOYES.

Productive Publicity.

The above is the title of a booklet recently sent out by Walter B. Snow, who has opened an office at 170 Summer Street, Boston, Mass. Mr. Snow makes his debut as a publicity engineer and announces that he is prepared to undertake work of any kind in the broad field of publicity for manufacturers of machinery and allied products.

His regular services will cover the conduct on a salary basis of the publicity department of a limited number of non-competitive clients. Special services will be rendered to others in the form of general advertising, catalogue making, and technical writing and investigation.

His intimate acquaintance with engineering in general and publicity in particular, acquired during his nearly 25 years connection with the B. F. Sturtevant Company, encourages him in the belief that his services can be made of exceptional value. Mr. Snow is well equipped for his new work and we take much pleasure in recommending him to concerns that require such services.

This pamphlet and other printed matter will be mailed on application.

Trade Press Publishers Meet in Washington.

The annual convention of the Federation of Trade Press Associations was held in Washington last month and discussed affairs of general interest to publishers of trade and commercial journals. The Federation includes in its membership several hundred of the leading trade journals of the country. These publications represent several million dollars' investment and are an important factor in the commercial and manufacturing development of the country.

Ten or fifteen years ago, the majority of trade papers were looked upon, and indeed most of them were, schemes. Today, every important industry has one or more publications which are recognized in the trade as substantial business propositions, filling an important place in the life of the industry.

At the banquet, in the evening, the Federation entertained as its guests, Postmaster-General Meyer, Third Assistant Postmaster-General Lawshe, and Major Carson, Chief of the Bureau of Manufactures. These gentlemen took that occasion to speak of important subjects relating to the business of the country.

John A. Hill, the publisher of the American Machinist, and Power, was the president last year, and the officers elected for the ensuing year are:

President, J. Newton Nind, of the Trade Periodical Co., Chicago; Vice President, Henry G. Lord, of the Textile World Record, Boston; Secretary-Treasurer, E. P. Harris, of the Selling Magazine, New York.

Executive Committee—David Williams, of the Iron Age, New York; W. H. Taylor, of The Engineer, Chicago; C. K. Reifsnider, of Farm Machinery, St. Louis; W. S. Jones, of Commercial West, Minneapolis.

Colors Fast to Perspiration.

With every advance that is made by coal-tar color manufacturers in the way of introducing dyestuffs superior in point of fastness to those previously in use, a corresponding advance is recorded in the demands made by the merchants in the severity of the tests which the goods ordered by them must withstand. One of the points upon which great stress is laid nowadays is that the dyeings must be fast to perspiration. Fastness to perspiration is naturally of more importance in some classes of goods than others; for instance, it is of first importance in blouse stuffs, shirtings, hosiery, sport flannels, etc. Unfortunately, there is no really satisfactory test for perspiration, and it is therefore a cause of trouble to all concerned in the color trade, both makers and consumers. Unlike ordinary demands, such as fastness to washing, which can easily be determined, fastness to perspiration cannot be so determined, but depends too much on the personal equation for one ever to be certain about it. It is a well-known fact that the action of perspiration on colors varies largely with different individuals owing to their different physical conditions, or even with the same individual at different times—i. e., that is, whether in good or indifferent health. This factor, it will readily be understood, makes it practically impossible to have a perfect test for perspiration; but it is much to be desired that some one test should be adopted and accepted as a standard, so that a color could be guaranteed fast to the standard test for perspiration.

One point which must not be lost sight of is that perspiration in the first stages has a weakly acid reaction, while in the later stages it is weakly alkaline. This fact alone at once complicates the devising of a satisfactory test.

The action of perspiration on colors may be twofold in effect—viz., change of shade and causing the color to bleed on to the adjacent clothing or the body itself. It must not be overlooked, however, that faulty dyeing may be the actual cause of the bleeding, due to imperfect fixation of the dyestuff or insufficient washing, in the same way as a fast milling color will bleed under the same circumstances.

Actual personal test. Give a dyed swatch, sewn along with white wool and cotton, to the boiler man, and get him to wear it under the arm-pit during a shift, then notice the effect after washing the swatch. This is probably as satisfactory as any test; but it is not always convenient to carry it out, and it also cannot get over the difficulty that the perspiration of no two individuals re-acts on colors in the same way.

Boiling water test. Throw a swatch of the color along with an equal swatch of white wool and white cotton into boiling water, and lift out at the end of one minute. Notice if the water is stained; also dry the swatches, and see if they are stained. If stained, the color is reputed not to be fast to perspiration. This is a very severe test even for acid colors, and still more severe for substantive colors.

Alkali test. Make a solution of 5 ounces Marseilles soap and 3 ounces ammonia in cubic foot. Work the pattern to be tested along with white wool and cotton in some of this solution for ten minutes at 122° F.; then wring out, but do not rinse. Now wrap the pattern in a piece of white calico and iron it dry with a hot iron, then examine the pattern to see how it has stood the test. This can be made still more severe by wrapping the pattern tightly round a glass rod; fasten it on, and dry it slowly at 122° F. This is suggested by Dr. Davidis for the black and white woolen goods, which have been so popular.

Acetic acid test. Make up a solution containing 10 parts acetic acid (30 per cent.) and 1 part common salt per 100 parts water. The salt is added, because perspiration contains salt. The pattern, along with white wool and cotton, is soaked in this, and slowly dried at 104° F. This test is varied in that the pattern is kept moist at this temperature with this liquid from an hour to as long as twenty-four hours before the pattern is dried.—C. M. Whitaker in Dyer and Calico Printer.

Wages in Austria-Hungary.

A recent report from a United States special agent gives some interesting data regarding low wages paid to mill operatives in Austria-Hungary. It constitutes a conclusive argument against lowering the tariff to bring American labor into competition with low-priced foreign labor.

In the 66 cotton-thread factories or establish-

ments 762 males and 2,192 females are employed, the proportion being 26 per cent. male and 74 per cent. female employes. Of half-cotton goods factories there are 21 mills, with 2,058 male and 3,060 female employes. The salaries paid in these two industries average even lower than in the spinning and weaving mills. The following are the wages paid in the cities, those in the small villages being from 10 to 15 per cent. lower:

Per day in spinning: Overseer, $1.30 to $1.40; engineer, $1.15 to $1.35; stoker, 85 to 95 cents; machinist, 85 to 95 cents; storeroom employes, 45 to 55 cents; carders, women, 30 to 35 cents; stretchers, women, 45 to 50 cents; flyers, women, 50 to 60 cents; mule spinners, men, 75 to 85 cents; frame spinners, men, 50 to 55 cents; reelers, women, 45 to 50 cents.

Per day in weaving: Overseer, $1.10 to $1.25; weavers, 65 to 75 cents; spoolers, women, 50 to 55 cents; warpers, women, 65 to 75 cents; foreman sizer, $1 to $1.10; assistant sizer, 50 to 55 cents.

The salary of managers of the larger factories varies from $1,200 to $3,000.

Large numbers of children are employed in the mills, they being employed almost without exception in the picking, drawing-frame, flyers, spooling and ordinary spinning departments. They usually begin work at the age of 14 years, with wages of from 20 to 25 cents per day. The wages of women average about 40 cents per day and of men about 75 cents per day for skilled operatives in the cotton industry, and from five to ten years are required to become a mule spinner at a wage of 80 cents per day. Girls tend to from 7 to 10 cards and 1 flyer each. The average wages in the spinning department may be considered at from 25 to 35 cents, and in the spool room at 30 to 35 cents per day. The working day is of from ten to eleven hours, generally eleven hours, from 6 a. m. to 6 p. m., with one hour at noon for lunch, though the employes all take lunches at 9 and at 3, but without stoppage of work, the lunches usually consisting of black bread and beer.

The employers complain of the lack of interest in the work performed and the notable absence of ambition. For instance, most weavers content themselves with tending two looms, earning from 35 to 45 cents per day, when they could easily tend four and earn nearly double. In very few cases does an employe tend three looms, and rarely ever four.

The Bohemian cotton manufacturers seem to be unanimous in saying that owing to more productive labor we in the United States are able, in spite of higher wages, to compete successfully with them in any of the unfinished cotton products, generally underselling them in the world's markets; but they add that it is impossible for us to compete with them in the finished products, as the finer lines of cotton goods require such attention from the employes that they cannot possibly attend to more than two or three looms, which, in view of the high cost of labor in America, brings the fine goods to a higher cost than the Bohemian products.

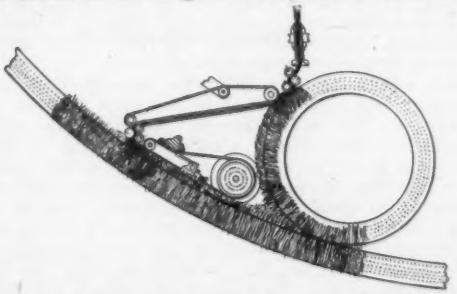
Recent Textile Patents.

BLEACHING OF COTTON. Electrolytic. 867,452. August A. Vogelsang, Dresden, Germany, assignor to the British Hosiery and Electrolytic Bleaching Co., London, England.

BOBBIN HOLDER. 867,532. William G. Ragsdale, Jamestown, N. C.

COMBS. Drawing Off Mechanism for. 862,980. Albert Long, Lawrence, and Robert Foster, Methuen, Mass.

The object of the present invention is more effectively to guide the fringe toward the drawing-off device of the large circle by means of an improved licker-in construction and to guide the fringe to this licker-in; to furnish an improved and economical means for propelling the sliver between the drawing-off devices of the large and small circles; to clear the rolls effectively; to improve the means for mounting and guiding the licker-in and the sliver-propelling means intermediate between the drawing-off devices; to intercept air currents acting on the fringe; and to facilitate the passage between the rolls of foreign substances in the wool.



CALENDER ROLLER. 867,908. Harry Bostell, Dusseldorf, Germany.

CARDING MACHINE Feeding Mechanism. 866,726. Harry Kemp, Newton, Mass.

CLOTH CUTTING Machine. 867,944. Albert Bosshard, Zurich, Switzerland.

COTTON CLEANER AND CONDENSER. 867,535. Edgar Reagan, San Antonio, Texas.

FABRIC EXPANDING or Stretching Apparatus. Textile. 868,098. Patrick W. Kiernan, Lowell, Mass.

LOOM. 968,228. Armand A. F. Thiery, Louvain, Belgium.

LOOM SHUTTLE. 867,740. Francis A. Mills, Lawrence, Mass.

LOOM SHUTTLE BOX Mechanism. 868,308. William M. Wattie, Worcester, Mass., assignor to Crompton & Knowles Loom Works.

LOOM STARTING and Stopping Mechanism. 867,934. George B. Ambler, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM, WEFT REPLENISHING. 867,127. Christian M. Hansen, Carl V. Mueller and Julius C. Carlsson, Vejle, Denmark.

LOOMS. Harness Hook for. 859,189. Isaac Andrews, Spartanburg, S. C.

The harness frame comprises, as usual, a pair of parallel heddle bars 1, and a pair of end bars 2, which may be of any preferred construction. The heddle bars have combined with them as usual the heddles 3, the back banding 4 of which is disposed respectively upon the upper and lower edges of the heddle bars and centrally thereof.

The harness supporting hook is illustrated in detail in Fig. 2, and comprises a pair of clamping members 5 terminating in inward projecting toes 6, a head or loop 7 connected with the clamping members by a twisted neck 8, and a clamping band 9 to hold the clamping members closed, it being observed that the clamping members are

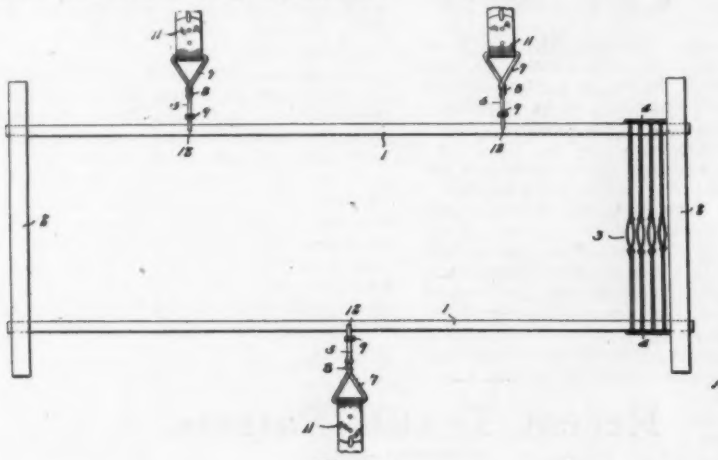


FIG. 1.

FIG. 2.

provided with inward depressions 10, adjacent to the toes 6 to be engaged by the band, whereby the latter is positively held against any accidental longitudinal movement relatively to the said members. From the standpoint of economy and for thorough efficiency in use it is preferred to make the hook of a single piece of wire of suitable gauge and formed in any preferred manner into the shape shown. The heads or loops 7 are engaged by the usual straps 11 that are connected in any preferred manner with the loom frame.

The toes 6 are designed to engage transverse orifices 12 formed any desired distance apart in the heddle bars, and by their manner of disposition it will be seen that there will be no deflection of the back banding when the hooks are in place, so that all the eyes of the heddles will be properly positioned for securing perfect work.

To combine the heddle bars with the hooks it will only be necessary to move the clamping band to the position in Fig. 2, then bring the toes 6 into orifices 12, and then move the band to the position shown in Fig. 1, whereupon the hooks will be securely assembled with the heddle bar and in such manner as positively to preclude accidental separation in use.

LOOM SHUTTLE CHECK. 864,900. Peter Macpherson, Worcester, Mass., assignor to Crompton & Knowles Loom Works.

LOOM. Swivel. 865,272. Eppa H. Ryon, Worcester, Mass., assignor to Crompton & Knowles Loom Works.

LOOM. 865,973. James L. Poalk, Philadelphia, Pa., assignor to the Automatic Oscillating Loom Co.

LOOM. 865,122. Moses Perreault, New Bedford, Mass.

LOOM. 866,491. Walter W. Linder, Charlotte, N. C.

LOOM. Cane. 865,283. William Wattie, Worcester, Mass., assignor to Crompton & Knowles Loom Works.

LOOM HARNESS Evener Mechanism. 865,264. Benjamin F. McGuinness, Worcester, Mass., assignor to Crompton & Knowles Loom Works.

LOOM PICKER STICK. 865,680. Eugene Chevrette, Fitchburg, Mass.

LOOM PICKER Stick Motion. 864,213. Robert Taylor, New Bedford, Mass.

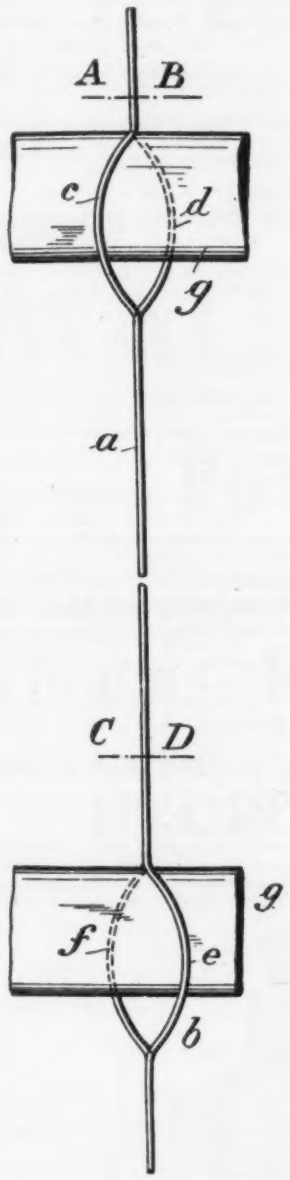
LOOM. Shuttle Box Operating Mechanism. 865,649. Frank Leming, Bradford, and Charles Hudson, Ingrow, England.

HEDDLE FOR LOOMS. 857,732. Julius Grob, Horgen, Switzerland.

The present invention relates to a flat heddle of metal, which when placed on the heddle-bar is secured against rotation to too great an extent about its longitudinal axis. Heddles of flat metal strips, compared with those of wire or circular cross-section, have usually the advantage of occupying less space between the warp threads, as they may be made proportionately very thin, owing to their width, without becoming of less strength than the circular heddles. On the other hand heddles of circular cross-section have the advantage of yielding in any direction; that is to say, their flexibility is equal or nearly so in all directions while flat heddles are very flexible in the direction of the flat or wide surfaces, but almost rigid in the direction of the narrow surfaces or edges. This fact has frequently caused great inconveniences during weaving with the flat heddles hitherto known.

For the purpose of permitting the heddles to move freely on the bars the end loops of these heddles are preferably made considerably wider than is required for the passage of the bars from

which the rotation of the heddles about their longitudinal axes results. If during weaving one or more lays are displaced in the direction of the warp threads, for instance, rearwardly from the



standing point of the weaver, the friction of the warp threads produces a certain pressure against the thread eyes which results in a yielding of the heddles in the direction of such pressure; viz., forwardly, since the heddles are flexible in this direction.

LOOM WEFT STOP MOTION. 867,032. William A. Grant, Paterson, N. J.

LOOMS. CONTROLLING Means for Take-ups for. 867,287. Martin Moul, Hanover, Pa.

LOOMS, FILLING FEEDER for Filling Replenishing. 868,586. Edward S. Stimpson, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOMS. SELVAGE Forming Mechanism for. 867,300. James L. Poalk, Philadelphia, Pa., assignor to Automatic Oscillating Loom Co.

LOOMS. TAPE WINDER for Tape. 868,268. Elbridge R. Holmes and Lawrence B. Jenckes, Worcester, Mass., assignors to Crompton & Knowles Loom Works.

LOOMS FOR WEAVING. Warp Stop Motion for. 867,596. Friedrich Pick, Vienna, Austria.

SILKWORM BREEDING Device. 867,138. Datiko Kaukasieli, West Berkeley, Cal.

SINGEING AND WINDING Machine. 867,297. William C. Perry, Charlestown, R. I.

SPINDLE. 868,499. Harry Spence, Lawrence, Mass.

SPINNING AND DOUBLING Frame. 868,009. Harry B. Reynolds, Stockport, England.

SPINNING MACHINE. Mule. 867,332. William E. Ahern, Worcester, Mass.

SPINNING MACHINE THREAD Guide. 868,005. John E. Prest, Melrose, Mass.

SPINNING. PREPARING FIBERS FOR. 866,918. Michael Collins, Lowell, Mass.

SHUTTLE BOX MOTIONS. Multiplier Mechanism for. 863,862. Leslie W. Lutton, Paterson, N. J.

This invention relates to looms and more particularly to means for operating the shuttle boxes in what is known as a box loom, the object being to shorten the box operating or multiplying chain

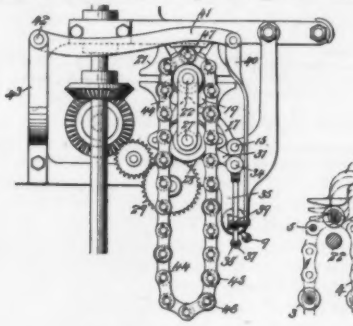


FIG. 1.

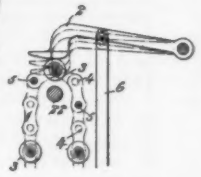


FIG. 2.

and at the same time increase its scope in respect to the number of variations in the groups of picks.

The operation is as follows: The roller, 3, on the box chain, by rocking the angle lever pivoted at 8, has through the bar, 15, thrown the multiplying chain, 44, to the left in position for a roller, 47, to engage the arm, 41. This will, by lifting on the rod, 40, as by means of the angle lever pivoted at 36, turn the pin wheel, 30, into operative relation to the star wheel, 25, and the latter is given a turn one step which will permit the lever, 2, to drop into its

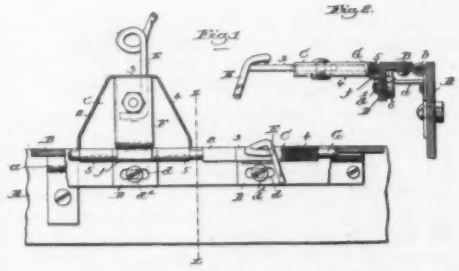
lowermost position, shown in Fig. 2, as the short end, 4, of the spindle on the box operating chain will not arrest it and this in turn has rocked the angle lever pivoted at 8 in position to shift the multiplying chain, 44, to the extreme right, where no roller will again engage the arm, 41, until the roller, 45, is reached and hence the boxes will not be shifted during the next consecutive steps of the star wheel, 21, intermediate the rollers, 47 and 45. When the roller, 45, is reached, it will again, through the arm, 41, and rod, 40, rock the angle lever pivoted at 36, throwing the star wheel, 25, again into action and it will take one step carrying the lever, 2, into position to rest on the extended spindle, 5, or the intermediate position shown in Fig. 2. This will rock the angle lever pivoted at 8 far enough to bring a roller in the position of the roller, 46, on the multiplying chain in position to engage the arm, 41, and this will again serve to operate the star wheel, 25, and hence pass the box operating chain into another position under the lever, 2.

SPINNING MULE Attachment. 865,890. Robert J. Harrington, Dalton, Mass.

SPINNING ROLLER. 866,364. Frederick Hutchins, Harlesden, England.

SPINNING AND TWISTING Machines. Thread Guide for. 863,218. John E. Prest, Melrose, Mass.

This invention has for its object to improve the class of thread guide supporting means shown in U. S. Patent No. 758,933, dated May 3, 1904. In that patent and others of which it is a type, the inner end of the guide eye at the underside of the finger board is covered by a shield or guard held in operative position by a bolt, flanges at the oppo-



site edges of the shield contacting with the under side of the finger board. The finger board in practice has to be stopped in its operative or horizontal position, and stopping of the finger board has been effected in various different ways.

In the present invention it is made to operate as a down stop for the finger board by a change in the shape of the shield.

Fig. 1 in front elevation shows part of a roller beam and thread board, with two finger boards, one of the latter being turned up, and Fig. 2 is a section on the line, x, Fig. 1, but with the finger board at the left turned down.

SPINNING, TWISTING and Winding Machine. 865,685. Robert Dawes, Philadelphia, Pa., assignor to Haskell & Dawes.

TEXTILE MACHINERY. Unbreakable Self Lubricating Long Collar for. 864,356. John H. Brindle, Manchester, England.

TWISTING ARTIFICIAL SILK. Machine for. 867,623. Montgomery Waddell, New York, N. Y., assignor to Silas W. Pettit, Philadelphia, Pa.

WOVEN FABRIC and Weaving the Same. 865,974. James L. Poalk, Philadelphia, Pa., assignor to the Automatic Oscillating Loom Co.

WARPING MACHINE. 868,452. Charles H. Knapp, Paterson, N. J.

YARN OR THREAD Gassing Machine. 866,734. Fred Rivett, Heaton Chapel, and Samuel Oldham, Heaton Norris, England.

Textile Trade-Marks Registered.

"310/13." Hosiery. Lord & Taylor, New York.
"409K." Hosiery. Lord & Taylor, New York.
"50K." Hosiery. Lord & Taylor, New York.
"Blackstone." Cotton Sewing Thread. Blodgett & Orswell Co., Pawtucket, R. I.
"Clifton Mills." Sheetings, Shirtings and Drills. Clifton Mfg. Co., Clifton, S. C.
"Dinah." Hosiery. M. Halff & Bro., San Antonio, Texas.
"Dress Parade." Hosiery. Paramount Knitting Co., Chicago, Ill.
"E325." Hosiery. Lord & Taylor, New York.
"Fairfield." Cotton Sewing Thread. Blodgett & Orswell Co., Pawtucket, R. I.
"Fluffy Ruffles." Hosiery. Rubens & Meyer, New York.
"Giant." Cotton Sewing Thread. The American Thread Co., Jersey City, N. J.
"Greenwoods. Montana." Cotton Duck. Mount Vernon-Woodberry Cotton Duck Co., Baltimore, Md.
"Hyperion." Bleached. Unbleached, Dyed and Printed Textiles. A. G. Hyde & Sons, New York.
"Kemnitz." Felts. Chas. W. House & Sons, New York, N. Y.
"La Grange." Cotton Duck. Consolidated Cotton Duck Co., Baltimore, Md.
"Lake Roland." Cotton Duck. Mount Vernon-Woodberry Cotton Duck Co., Baltimore, Md.
"Lonsdale." Cotton Sewing Thread. Blodgett & Orswell Co., Pawtucket, R. I.
"Medford." Cotton Sewing Thread. Blodgett & Orswell Co., Pawtucket, R. I.
"Michigan Knit." Knitted Goods. Michigan Knitting Co., Lansing, Mich.
"O P G." Alizarine. George W. Gilbert, Boston, Mass.
"Rubens." Knit Undershirts. Rubens & Marble, Chicago, Ill.
"Sea Island Yachting Cloth." White and Colored Cotton Cloth. L. Hess & Co., New York.
"Sil-kee-na." Knitted Shirts, Skirts and Hosiery. George Lund, London, England.
"Skibo." Worsted and Cotton Dress Goods. Strawbridge & Clothier, Philadelphia, Pa.
"Sunrise." Embroidery Cotton. Carson Pirie Scott & Co., Chicago, Ill.
"Worumbo." Woolen Piece Goods. Worumbo Mfg. Co., Bath, Me.
"W R." Alizarine. George W. Gilbert, Boston, Mass.

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The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisement. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in these classified lists such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources.

Advertisers whose names do not appear under desired headings will please notify the publishers. Such omissions are accidental, not intentional.

Accounts Financed.
Cathrail, W. M.

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Arc Lighting (Inverted).
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Johns-Manville Co., H. W.

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Asphalt Tanks.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
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Harwood, Geo. S., & Son.
Kitson Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Automatic Warp Tying Machines.
Barber-Colman Company.

Bale Ties.
Acme Steel Goods Co.
DeHaven Manufacturing Co.

Balling Machine.
Torrance Mfg. Co.

Bandings.
——See under Yarns.

Baskets.
Lane, W. T., & Bro.
Morris & Co.

Belting.
Boston Belting Co.
Chicago Belting Co.
Gandy Belting Co.
Main Belting Co.
Shultz Belting Co.
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Belt Dressing.
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Dixon, Jas., Crucible Co.
Shultz Belting Co.
Stephenson Mfg. Co.

Belt Lacing Machines.
Birdsboro Steel Foundry & Machine Co.

Bindings.
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Allen, Wm., Sons Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Textile Finishing Machinery Co.

Bleaching Materials.
Bosson & Lane.
Roessler & Hasslacher Chemical Co.

Blowers and Blower Systems.
American Blower Co.
Dean Bros. Steam Pump Works.
Green Fuel Economizer Co.
Mass. Fan Co.
Philadelphia Drying Machinery Co.
Sterling Pipe & Blower Co.
Sturtevant, B. F., Co.
Schnitzler, Chas. H.

Bobbins, Spools, Shuttles, Etc.
American Supply Co.
American Textile Specialty Mchy. Co.
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Tebbets, E. L., & Co.
Wilson & Co.

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Boiler Compound.
Johns-Manville Co., H. W.

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Braiding Machinery.
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Textile Machine Works.

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Bridges.
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Calico Printers' Machinery and Supplies.
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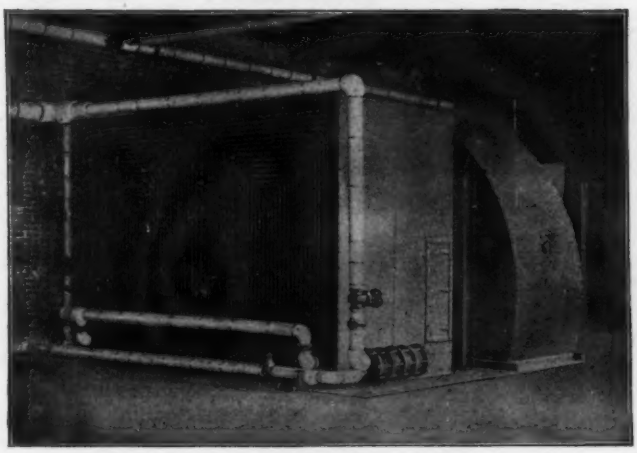

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Dixon, Jos., Crucible Co.

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Klauder-Weldon Dyeing Machine Co.
Parks & Woolson Machine Co.
Smith, Drum & Co.
Textile Finishing Machinery Co.
Whiteley, William, & Sons, Ltd.

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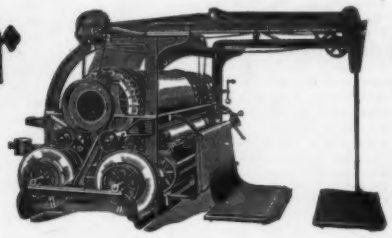
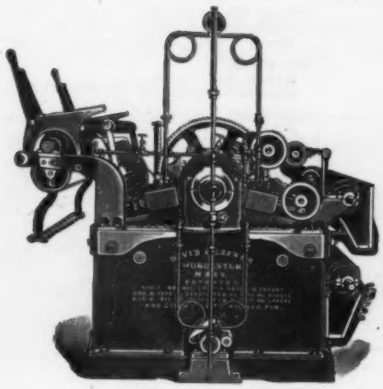
David Gessner

Worcester, Mass.





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Improved
Cloth
Finishing
Machinery

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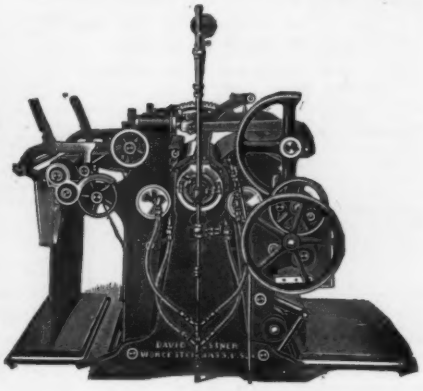
Napping
Machines
and
Presses
a
Specialty



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Eureka Fire Hose Co.
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Leigh, Evan A.
Morris & Co.
Murphy, E. W., & Co.
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Pratt, R. C.
Riley, C. E., Company.
Richardson Bros.
Shaw, Victor, Ring Traveler Co.
Stephenson Mfg. Co.
Stoddard, Haserick, Richards & Co.
Thurston, A. G., & Son.
Ward & Vandegrift.
Walworth Manufacturing Co.
Mineral Wool.
Johns-Manville Co., H. W.
Napping Machinery.
Birch Bros., Somerville Machine Wks.
Curtis & Marble Machine Co.
Gessner, David.
Jones, Lewis.
Leigh, Evan A.
Parks & Woolson Machine Co.
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Merwin Paper Co.
Smythe, J. L. N., Paper Co.
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Howson & Howson.
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Hopkins Machine Works.
Peroxide of Sodium.
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Scaife, W. B., & Sons.
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Griffin Roofing Co.
Pneumatic Conveying.
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Almond, T. R., Mfg. Co.
American Drying Machinery Co.
American Mfg. Co.
American Pulley Co.
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Hunter, Jas., Machine Co.
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Spence & Rideout.
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Pressure Regulators.
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Pulleys.
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Pumps.
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Goulds Mfg. Co.
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Crosby Steam Gage & Valve Co.
Dean Bros. Steam Pump Works.
Walworth Mfg. Co.
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Hungerford & Terry.
Norwood Engineering Co.
Philadelphia Water Purification Co.
Scaife, W. B., & Sons.
Quillers.
Foster Machine Co.
Payne, G. W., & Co.
Rag Pickers.
Schofield, Wm., Co.
Smith & Furbush Machine Co.
Ramie Tops and Noils.
Tierney, Frank A.
Raw Hide Gears.
New Process Raw Hide Co.
Philadelphia Gear Works, Inc.
Reed and Harness Manufacturers.
American Supply Co.
Garland Mfg. Co.
Walder, J.
Reducing Valves.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.
Regulators (Pressure).
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.
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Feingold, H. & D.
Ribbon Cutters.
Cameron Machine Co.
Ribbons.
Cheney Bros.
Ring Travelers.
DeHaven Mfg. Co.
Shaw, Victor, Ring Traveler Co.
Roofing.
Griffin Roofing Co.
Standard Paint Co.
Roofing Material.
Johns-Manville Co., H. W.
Roller Leather.
Bowes, L. M., Co.
Jefferson, Edward & Brother.
Rope.
American Mfg. Co.
Plymouth Cordage Co.
Rope Transmission.
American Mfg. Co.
Cresson, Geo. V., Company.
Hunt, Rodney, Machine Company.
Plymouth Cordage Co.
Roving Cans.
Hill, James, Mfg. Co.
Rubber Rolls.
Boston Belting Co.
Ruberoid Roofing.
Standard Paint Co.
Scallop Machines.
Merrow Machine Co.
Schools.
International Correspondence Schools.
Lowell Textile School.
New Bedford Textile School.
Philadelphia Textile School.
Secondhand Machinery.
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Draper Co., The.
Separators (Oil and Steam).
Harrison Safety Boiler Works.
Sewing Machines and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
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Curtis & Marble Machine Co.
Dinsmore Mfg. Co.
Fales, L. F.
Ginsberg, A., & Son.
Manufacturers' Supplies Co.
Textile Finishing Machinery Co.
Union Special Machine Co.
Walter & Co.
Willcox & Gibbs Sewing Machine Co.
Sheet Metal Work.
Scaife, W. B., & Sons.
Sterling Blower & Pipe Mfg. Co.
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Thurston, A. G., & Son.
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Shuttles.
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Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Silk Mill Supplies.
Hall, I. A., & Co.
Silk Noils.
Fawcett, Hughes.

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Textile Finishing Machinery Co.

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Riley, C. E., Company.

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Zurn, O. F., Co.

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Bodden, Wm. & Son, Ltd.
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Howard & Bullough American Machine Co.
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Spinning Tubes.
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Spools.
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Easton & Burnham Machine Co.
Lindsay, Hyde & Co.
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Payne, George W., & Co.

Stacks.
Scaife, W. B., & Sons.

Steam Boilers.
Allen, William, Sons Co.
Harrison Safety Boiler Works.
Scaife, W. B., & Sons.

Steam Boiler Insurance.
Hartford Steam Boiler Inspection & Insurance Co.

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Steam Engines.
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Hooven, Owens & Rentschler Co.
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Steam Jacket Kettles.
Badger, E. B., & Sons Co.

Steam Pumps.
Dean Bros. Steam Pump Works.
Goulds Manufacturing Co., The.

Steam Specialties.
Butterworth, H. W., Sons Co.
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Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Walworth Manufacturing Co.

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American Blower Co.
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Stop Motion for Knitting Machines.
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Power Specialty Co.

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Cypress Lumber Co.
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Hopkins Machine Works.
Hunt, Rodney, Machine Company.
Textile Finishing Machinery Co.
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Stearns, A. T., Lumber Co.
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Chapin, George W.
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Maurer, F. W., & Sons Co.
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Robinhold Machine Co.

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Trolleys.
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H. W. Gillett
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American Mfg. Co.
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Walworth Mfg. Co.

Variable Speed Transmission.
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Lever, Oswald, Co.
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Tolhurst Machine Works.
Whiteley, William, & Sons, Ltd.
Woonsocket Machine & Press Co.

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Heyer, Charles H.

Wool Oiling Apparatus.
Harwood, Geo. S., & Son.

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Excelsior Wool Oil Compound Co.

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Richards

municate with parties contemplating any additions or changes in mill equipments and to send circulars describing at length, our machines and supplies.

& Co.

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Eddy & Street.
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Malcolm Mills Co.
Orswell Mills.
Salkeld, A. D., & Bro.
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Strouse, Theo. H., & Co.

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Greene & Daniels Mfg. Co.
Harding, Whitman & Co.
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Littauer, Ludwig.
Jenckes Spinning Co.
Mitchell, James E., & Co.
Monument Mills.
Sternberg, Fred, & Co.

Mercerized Yarns.
Harding, Whitman & Co.
Littauer, Ludwig.
Lorimer, E. D., & Co.
Lorimer, Wm. H., & Sons Co.
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Sternberg, Fred, & Co.
Strouse, Theo. H., & Co.

Mohair Yarns.
Harding, Whitman & Co.
Littauer, Ludwig.
Montgomery, J. R., & Co.

Novelty Yarns, Tinsels, Silk Noils, Etc.
Jenckes Spinning Co.
Littauer, Ludwig.
Malcolm Mills Co.
Montgomery, J. R., & Co.
Sternberg, Fred, & Co.

Seaming Yarns.
Ravine Mills Co.

Silk Noils.
Tierney, F. A.

Silk Yarns.
Chapin, Geo. W.
Cheney Bros.
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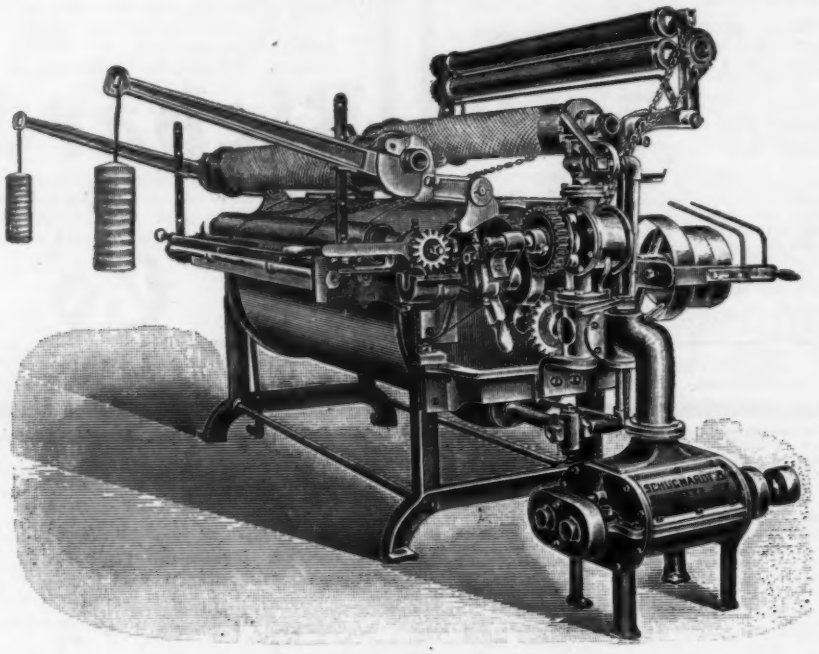

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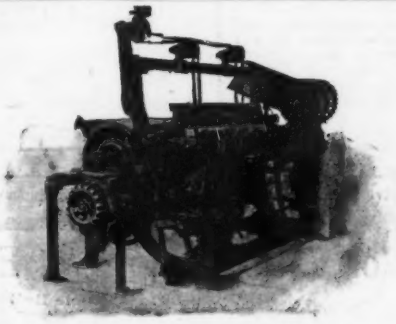

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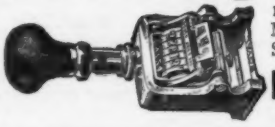
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"One of the great national problems is the conserving of the fuel resources. At the present rate of increase in consumption the better part of the fuel supply of the country will be gone by the end of the present century, unless the proper steps are taken. *Coal is now the world's great fuel.* Wood has been used extensively in the past, especially for domestic purposes. Gas and petroleum continue to have an extensive local use, and in power and light developments, water power will play an important part in many portions of the country. But, the world's great centers and industries of today, and as far as we know, of the future, must look to coal as their source of heat, power and light. These fuel resources should be conserved, because their supply is limited. At the present, their early exhaustion is certain. If this rate of increase continues, the better part of the fuel supply of the country will have been consumed by the end of the present century"

Hadn't you better invest some of your money in Cross Creek 6% Gold Bonds and secure a bonus of preferred stock?

Write for particulars.

Cross Creek Coal Company

609 Mutual Life Bldg., BUFFALO, N. Y.

MEN WANTED.

Wanted First-Class Dyer

on cotton yarns. One familiar with dyeing for the Suspender Webbing Trade. Address "S. W.," care Textile World Record, Boston, Mass.

Wanted a Knitter

thoroughly experienced on Cooper 30 gg Spring Needle Body Machines, and on Cooper Circular and Flat Bed Cuff Machines. A splendid opportunity for a first-class man. State experience, age and salary.

GLOBE KNITTING WORKS, Grand Rapids, Mich.

Experienced Weavers Wanted on Narrow Fabrics.

Can earn $15.00 per week; $10.00 per week guaranteed. Steady work. **The Russell Mfg. Co., Middletown, Conn.**

WANTED, A MANAGER IN A HOSIERY MILL

In Canada employing 35 hands, who can invest $5000, or would sell. Address,

"O. N. T.," care Textile World Record, Boston, Mass.

Wanted. An overseer to take charge of the mule and ring spinning (totalling about 20,000 spindles), in a small mill, North, English machinery, recently erected. Apply to "North," care Textile World Record, Boston, Mass.

SITUATIONS WANTED.

The following advertisements are a portion of those of superintendents and overseers, of whom full particulars are on file at this office. Manufacturers who may be in need of such men may address them in care of Textile World Record, Boston, or state their requirments directly, and the addresses of suitable men will be furnished without charge.

Mr. C. T. Donlevy, a practical mill overseer and superintendent, who has a wide aquaintance with mill men, is now a member of the Textile World Record staff, and gives special attention to this department. He would be pleased to hear from any of his friends who may be interested. Address Textile World Record, 144 Congress St., Boston, Mass.

Wanted a chance to build up business

as Salesman, Superintendent, or Manager, by a young man thoroughly experienced on heavy filled goods.

Address, "Good References," care Textile World Record, Boston.

Master Mechanic. Position wanted by a man 44 years of age; has had experience as master mechanic in cotton and knitting and all textile mills. Will not go west, or Canada. Could take a position at short notice. 3782, Textile World Record, Boston.

Second Hand in Cloth Room wants position as overseer or second hand; 20 years' experience on all kinds of goods; understands napping thoroughly; good references. 3048, Textile World Record.

Boss Bleacher. Bags, shades, lawns, mercerized. Hollands, book cloth and table cloth. Prefers New York, New Jersey or Pennsylvania. 3083, Textile World Record.

Boss Dyer and Bleacher. Age 34; English; married. Yarns, warps, knit goods. Can give good references. Wants $4 or more. 3020, Textile World Record.

Overseer of dressing. American; married. Wool, worsted and cotton worsteds. 3165, Textile World Record.

Assistant Designer. Young man 25 years of age, graduate of Lowell Textile School, present time employed in a woolen mill, would like to make a change. Understands designing woolen and worsted cotton fabrics for men's wear and ladies' dress goods. Familiar with Crompton & Knowles looms. Address "B. V. L.," care Textile World Record, Boston, Mass.

Sketch Maker in Print Works. Position wanted by a man 50 years of age, married. Has worked on all kinds of goods that are printed. Twenty years' experience in large mills. Good reference. 4078, Textile World Record, Boston, Mass.

Overseer of Dressing, Spooling and Winding. Worked on all kinds of woolen and worsted men's wear and ladies' dress goods. First-class references. 31 years of age; Scotch. 3269, Textile World Record, Boston, Mass.

Overseer Twisting, spooling and warping in a cotton mill. Position wanted by a man 33 years of age, married, American. Worked on coarse and fine, white and colored cotton goods. Familiar with Draper, Collins Bros. and Whitin and Lowell machines. Wants New England only. Good reference. 3830 Textile World Record, Boston, Mass.

Overseer of Dyeing and starching cotton piece goods. Position wanted by a man who has had a wide experience on all kinds of cotton piece goods, is familiar with jig, two and three box machines, also one box padding machine; 45 years of age, American. Good reference. 3781, Textile World Record, Boston.

Cloth Overseer or second hand in dress room. Englishman, 27 years of age, with experience on all classes cotton goods and the different kinds of machinery used in this work, is seeking position. Good references. 3380, Textile World Record, Boston.

Overseer of Combing. Position wanted by a man 27 years of age, married, English. Has worked on men's wear and fancy dress goods. Is familiar with Noble combs of all makes, Crompton, Taylor, Wadsworth, Smith and Prince. Good references. 3617, Textile World Record, Boston, Mass.

WOOLEN SUPERINTENDENTS.

Superintendent Woolen or knitting mill. Position wanted by a man 40 years of age, American, married. Has had a wide experience on all kinds of woolen and worsted goods. Familiar with the American and English machinery. Good references. 3882, Textile World Record.

Assistant Superintendent and designer or overseer of dressing in a worsted mill. Position wanted by a man 31 years of age, German, married. Worked on kerseys, beavers, chinchillas, coverts, venetians, broadcloths, flannels and carriage cloths. Could be employed at once and at moderate salary. Good references. 3893, Textile World Record.

Assistant Superintendent and designer, or overseer of weaving. Position wanted by a man 37 years of age; married; American. Has worked on all classes of woolen and worsted goods, ladies' and men's wear, both fancy and piece dyes. Is familiar with Crompton & Knowles looms. Good references. 3605, Textile World Record, Boston, Mass.

Superintendent and Designer. Position wanted by a man 38 years of age; married; worked on men's wear fancy worsteds, cotton worsteds, overcoatings and dress goods. Good references. 3056, Textile World Record, Boston, Mass.

Woolen Superintendent or designer. Familiar with all kinds of fancy worsteds, dress goods, men's wear, fancy cotton dress goods. Familiar with all kinds of American and English machinery. First-class references. English; age 40. Address 3111, Textile World Record.

Superintendent of woolen mill. Was in business for himself for years. He is now open for a position. Age 52, married, first-class references from commission houses. 3227, Textile World Record.

Superintendent and designer, or assistant superintendent. Age 34; married. Worked on cloths ranging from all cotton to all wool and worsteds, such as cotton worsteds, jeans, army cloths, kerseys, etc. **Excellent references. 3148, Textile** World Record.

Superintendent and Designer in a woolen mill. Position wanted by a man 31 years of age, Scotch-American. Is familiar with woolens, worsteds, thibets, cotton warps, dress goods, broad cloth, cotton worsteds, tourist cloth. All kinds of woolen machines. Will not go West. Good references. 3944, Textile World Record.

Superintendent or Designer in a woolen mill. Position wanted by a man 47 years of age, married, American. Worked on all kinds of woolen and worsted goods. Familiar with all kinds of woolen machinery. Four workers in the family. 3977 Textile World Record.

Assistant Superintendent, or assistant designer. Position wanted by a man 27 years of age, single. Has worked on cassimere, kersey, broad cloth and dress goods. Is a graduate of the Lowell Textile School in designing, and has several years of practical experience in different departments of the mill. Would work for moderate wages in order to get a start. Good references. 3918, Textile World Record, Boston.

Superintendent, Designer or boss weaver. Position wanted by a man 39 years of age, married. Has worked on woolen and worsted. Would take a position anywhere. First class reference. 3925, Textile World Record, Boston.

Agent, Superintendent or Designeer in a woolen mill. Could accept a position in four weeks' notice. Familiar with all kinds of woolen goods, including cheviots, cassimeres, flannels, blankets and mackinaws. 28 years of age; American; first-class references from mills where he has been employed. 3280, Textile World Record.

Assistant Superintendent and Designer. Position wanted by a man 32 years of age, married. Is experienced on men's wear, dress goods, cotton worsteds, woolens, linen towels, madras, flannels, etc. Is familiar with Knowles, Crompton, Clipper, Bridesburg dobby cam looms, dressing, spooling, twisting and warping frames. Good references. 3665, Textile World Record, Boston, Mass.

COTTON SUPERINTENDENTS.

Superintendent of Silk Mill or an overseer of warping. Position wanted by a man 31 years of age, Swiss, married. Speaks German, French, Italian and English. Understands all kinds of winding, spooling and twisting machines. Is familiar with office work. Has worked on silk goods, broad silk, 2, 3, 4, 5 beam work, fancy, jacquard and raw silk goods. Good references. 3908, Textile World Record, Boston.

Superintendency of Bleaching, dyeing and finishing wanted by a thoroughly practical man, textile chemist, at present employed. Has had wide experience on the finest muslins and organdies. Laces and embroideries a specialty. Fully understands aetying, fireproofing, carbonizing, singeing, dyeing, etc. A practical man and no experimenter. An expert bleacher and finisher. 3443, Textile World Record, Boston.

Manager or Superintendent in small yarn mill, or overseer of mule or ring spinning in a large mill. Position wanted by a man 42 years of age, American, married. Worked on all kinds of cotton goods and yarns. Familiar with mule, ring frames, spoolers, twisters, etc. Will not go to Canada. First class references. 3907, Textile World Record, Boston, Mass.

Superintendent Cotton Mill or overseer of carding in large mill. 35 years of age; married; American. Worked on coarse and fine fancy cloths. Carded combed staple cotton for weaving as fine as 135s. Carded solid colors and mixes for hosiery yarns to 80s. Good references. 3447, Textile World Record, Boston.

Superintendent, Assistant Superintendent and Designer, or overseer of weaving and finishing. Position wanted by a man 33 years of age, American. Is experienced on ginghams, madras, shirtings, linings, lawns, silks and ducks. Is familiar with all kinds of cotton machinery. Good references. 3616, Textile World Record, Boston, Mass.

Superintendent of Finishing Works or overseer. Position wanted by a man who has a wide experience on cotton goods of all kinds, fast blacks and sateens. 49 years of age, married, with good reference from past employer. Will go any place for a good position. American. 3461, Textile World Record, Boston.

Superintendent of Cotton Mill, or overseer of cotton weaving. Position wanted by a man 38 years of age, married, American. Worked on shirtings, sateens, dress goods, satin and Marseilles quilts. Familiar with Crompton, Knowles, Whitin and English looms; Lowell frames; Saco & Pettee cards. Good references. 4031 Textile World Record.

Assistant Superintendent or Overseer of weaving in a cotton mill. Position wanted by a man 31 years of age, married, American. Worked on plain sateens, fancy lenos, box work, as high as 100s warp, and 160s filling. Familiar with all kinds of machinery. Will not go West, South or Canada. Good references. 4019 Textile World Record.

Superintendent or Assistant Superintendent in a cotton mill or overseer of spinning, carding or weaving. Position wanted by a man 38 years of age, married, American. Also understands designing. Has worked on canton flannels, shirtings, sheetings, lawns, towels, dress goods, and all kinds of Dobby and Jacquard work. Familiar with Crompton & Knowles, Crompton & Thayer, Whitin, Mason, Bridesburg, Dobby and Jacquard looms; Asa Lees and Hetherington mules; American and English cards; ring spinning. Will not go West, South, Canada. Good references. 3989 Textile World Record.

Assistant Manager or superintendent, office position or designer on elastic and non-elastic webbing. Position wanted by a man, 24 years of age, American, single. Is a graduate of the Lowell Textile School, three years' course. Has had 1 1/2 years' practical experience as designer on the above goods and school training on woolen, worsted and cotton fabrics. Familiar with Crompton & Knowles, Whitin and Draper looms, also Jacquards. Good reference. 3790, Textile World Record, Boston, Mass.

WOOLEN SPINNERS.

Overseer Woolen Spinning. Position wanted by a man 45 years of age, married, worked on woolen goods made of wool shoddy and cotton mixes; good references; take position at short notice. 4044. Textile World Record, Boston.

Overseer of Woolen Spinning. Position wanted by a man, 55 years of age, American, married. Familiar with J. & B. mules. Good reference. 3797. Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a married man 44 years of age. Worked on all kind of yarns on Platt mules, D. & F. J. & B. and Tatham machines. First class reference. Could take position at short notice. Will not go South, West or Canada. 4076, Textile World Record, Boston, Mass.

Overseer of Spinning, Twisting and Winding. Position wanted by a man 39 years of age, married, American. Has worked on yarns from 7/8 run to 10 run, wool, cotton and shoddy mixes. Is familiar with Davis & Furber and Johnson & Bassett spinning machinery. Good references. 3567, Textile World Record, Boston, Mass.

Boss Spinner in a woolen mill. 32 years of age, American; familiar with Davis & Furber, Johnson & Bassett and English mules and twisters. First-class references. 3275, Textile World Record.

Overseer of Spinning. Position wanted by a man 36 years of age, married, English. Has worked on all kinds of wool, cotton and shoddy mixes, and is familiar with English mules, Johnson & Bassett mules and jacks. Good references. 3622, Textile World Record, Boston, Mass.

Overseer of Wool Spinning. 39 years of age, with 15 years' experience as overseer on flannels, cassimeres, cheviots, kerseys and cotton mixes. Also on all machinery used in his work. Wants position in the East. 3434, Textile World Record.

Overseer of Spinning. Position wanted by a man 48 years of age, English. Has worked on all classes of woolen goods, and is familiar with Johnson & Bassett, Davis & Furber and Platt spinning machinery. Good references. 3522, Textile World Record, Boston, Mass.

Overseer of Carding. American, 40 years of age, with 8 years' experience as overseer, accustomed to all grades of woolen and cotton and shoddy mixes, and to all kinds of woolen carding machinery, wants position in the North. 3358, Textile World Record

Overseer of Spinning or Twisting, or both, in a woolen mill. Position wanted by a man 41 years of age, married, American. Worked on wool, cotton and shoddy, also wool, cotton, worsted and silk twists, and a little novelty yarn. Familiar with D. & F. and J. & B. mules. Will not go West, South or Canada. Good references. 4015 Textile World Record.

Overseer Woolen Spinning. Position wanted by a man 31 years, single. Has worked on cassimeres, blankets, hosiery, and all grades of fine woolen. Won't go to Main or Canada. Could take position at once. Good references. 3892, Textile World Record.

Overseer of Spinning. Position wanted by a man 30 years of age; English. Has worked all kinds of stock, cotton, wool and shoddy, from 5/8 run to 12 and is familiar with Davis & Furber mules and operators. Good references. 3595, Textile World Record, Boston, Mass.

Overseer of Spinning. Position wanted by a man 37 years of age; married and American. Has worked on all kinds of wool, cotton and shoddy mixes. Is familiar with Davis & Furber and Johnson & Bassett spinning machinery and operators. Good references. 3603, Textile World Record, Boston, Mass.

Overseer of Spinning, twisting, spooling and reeling. Position wanted by a man 28 years of age, married and American. Has worked on army and navy goods, fine and heavy woolen and merino yarns, fine worsteds, and low stock shoddy and cotton mixes. Is familiar with Davis & Furber, James Smith, Whiteley, English Bridesburgh, and Platt mules. Would prefer a position near Philadelphia. Good references. 3517, Textile World Record, Boston, Mass.

WOOLEN WEAVERS.

Overseer of Weaving. Position wanted by a man 40 years of age, married, English. Has worked on all kinds of woolen and worsted goods. Is familiar with Knowles and Crompton looms. Good references. 3647, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving. 18 years' experience as overseer. Worked on cassimeres, cloakings, chinchillas, cheviots, beavers, meltons, shawls, also worsteds and on Crompton and Knowles looms, wants a position in the East. Good references. 3422, Textile World Record, Boston.

Overseer of Weaving, or charge of pattern room. Position wanted by a man 28 years of age, English, single. Worked on all kinds of woolen, worsted and cotton mixed goods. Familiar with Crompton & Knowles. Good references. Will go anywhere for a good position. 3919, Textile World Record, Boston.

Boss Weaver, or assistant superintendent. Position wanted by a man 30 years of age, married. Has worked on dress goods, fancy cassimeres, cotton warp, blankets, shawls and cloakings. Familiar with Crompton and Knowles looms. Will not go West, South or Canada. First class references. 3928, Textile World Record, Boston.

Overseer of Weaving in a woolen mill. Position wanted by a man 37 years of age, married. Familiar with all classes of woolens, fancy worsteds, cotton worsteds, unions. Familiar with Crompton & Knowles, Crompton & Thayer, Draper automatic looms. Good references. Will not go to Canada. 3965 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 47 years of age, married, American. Worked on all classes of woolens, worsteds and dress goods. Familiar with Crompton & Knowles looms. Good references. Will not go to Pennsylvania, West, South or Canada. Could take position at once. 3970 Textile World Record.

Overseer of Woolen Weaving or assistant designer. Position wanted by a man 33 years of age, married, German-American. Worked on woolen and worsted. Has had 12 years' experience as loom fixer; also textile school training in designing. Worked on high and low grade woolen and worsteds. Prefers a position in the New England States. Good references. 3962 Textile World Record.

Overseer of Weaving in a woolen mill. Position wanted by a man 39 years of age, married, American. Familiar with dress goods, men's wear, cotton worsteds, kerseys, cloakings, etc. Familiar with Knowles & Crompton and Andover looms. Good references. Will not go to Pennsylvania, New York, New Jersey, West, South or Canada. 3959 Textile World Record.

Overseer of Woolen Weaving. Position wanted by a man 38 years of age, married. Worked on woolen, worsted, dress goods and men's wear. Familiar with Knowles, Crompton, Whitin, Mason, Lowell, Lewiston and Draper looms. Will not go to Pennsylvania, West or to Canada. Good references. 3957 Textile World Record.

Overseer of Weaving. Position wanted by a man 32 years of age and married. Has worked on woolen dress goods, suitings, cotton worsteds, worsted dress goods, kerseys, beavers and blankets. Is familiar with Crompton, Knowles, Furbush, Davis & Furber looms and dobby looms. Has first-class recommendations. 3544, Textile World Record.

Overseer of Weaving. Position wanted by a man 28 years of age, single and Scotch. Has worked on wool and worsted, and union goods, blankets, shirtings, rugs, etc. Is familiar with Crompton & Knowles, also English looms and dobbies. Has good references. 3507, Textile World Record.

Overseer of Woolen Weaving. American, 40 years of age, married, with experience on worsteds, cassimeres, kerseys, dress goods, satinets, etc., wants a position in the East. Has worked on all machinery used in this work. 3411, Textile World Record.

Overseer of Woolen Weaving. Position wanted by a man 32 years of age, American, married. Familiar with Crompton & Knowles looms. Worked on broad cloth, fancy woolen, cassimeres, high and low grade goods. Will not go West, South or Canada. Good references. 3900, Textile World Record, Boston.

WOOLEN CARDERS.

Overseer of Carding. Position wanted by a man 34 years of age, married. Has worked on all wool, wool cotton and shoddy mixes, cassimeres, kerseys, cheviots, cloakings, etc. Is familiar with all makes of American cards. Good references. 3562, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man, 39 years of age, married, American. Has worked on wool, shoddy and cotton mixed goods, dress goods, kerseys, overcoatings, cassimeres, etc. Familiar with D. & F. carding machinery. Good reference. 1766, Textile World Record, Boston.

Overseer of Woolen Carding. Position wanted by a man, 33 years of age, married, American. Worked on all kinds of cotton, shoddy and wool mixed goods. Familiar with all kinds of woolen carding machinery. Will not go west, south or Canada. Could take a position at short notice. Good reference. 3774, Textile World Record, Boston.

Overseer of Woolen Carding. Position wanted by a man 37 years of age, married. Worked on all grades of woolen goods. Familiar with all woolen cards. Will not go West or South. One girl in the family, work in the finishing room. Good references. 3982 Textile World Record.

Overseer of Carding in a woolen mill. Position wanted by a man 42 years of age, married, American. Worked on kerseys, dress goods, cassimeres, high and low stock. Familiar with all kinds of American machinery. Good references. 4005 Textile World Record.

Overseer of Woolen Carding. Position wanted by a man 39 years of age, married. Worked on all kinds of goods. Familiar with all kinds of machinery. Two workers in the family. Will not go West, South, Canada or Pennsylvania. Good references. 3987 Textile World Record.

Overseer of Carding in woolen or hosiery mill. Position wanted by a man 35 years of age, married, American. Worked on all classes of goods and all kinds of stock. Familiar with all kinds of American and English cards, and all kinds of condensers and feeds. Will not go West, South or Canada. Good references. 3988 Textile World Record.

Overseer of Woolen Carding. Position wanted by a man, 47 years of age, American, married. Has handled all kinds of stock, cotton, wool and shoddy mixes on yarns from 1 to 6 run. Has been employed for a number of years in leading mills. First class reference. 3815, Textile World Record, Boston, Mass.

Overseer of Carding and Spinning in a woolen mill. Position wanted by a man 33 years of age, married, American. Worked on hosiery yarn, blankets, cassimeres, meltons, flannels, felt, etc. Familiar with D. & F., J. & B. mules; Smith, Cleveland and Furbush cards. Good references. 4029 Textile World Record.

Overseer of Carding in a knitting, woolen or shoddy mill. Position wanted by a man 33 years of age, married, American. Worked on wool, cotton and extract shoddies, dress goods, overcoatings, cassimeres, etc. Familiar with all kinds of carding machines, also J. & B., D. & F. and Bridesburg mules. Will not go to Maine, New Hampshire, Vermont, Massachusetts or Canada. Good references. 4017 Textile World Record.

Overseer of Carding and spinning. Position wanted by a man, 22 years of age, single. Understands all kinds of American carding and spinning machinery. Has worked on hosiery yarns and all kinds of woolen goods. Good references. 3723, Textile World Record, Boston, Mass.

Overseer of Carding. Position wanted by a man 34 years of age and married. Has worked on outing flannels, suitings, cassimeres, overcoatings, crashes, meltons, skirtings, kerseys, doeskins, broadcloths, coverts, cheviots and thibets. Is familiar with Davis & Furber, Cleveland, English cards and garnett machines. Good references. 3513, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man, 35 years of age, married, American. Worked on cotton, wool and shoddy mixes and is familiar with very low stock, all kinds of woolen cards, Barker condensers. Good reference. 3800, Textile World Record, Boston, Mass.

FINISHERS.

Overseer of Finishing.. Position wanted by a man 43 years of age, American and married. Has worked on all classes of fancy worsteds and is familiar with all kinds of finishing machinery. Good references. 3497, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man 40 years of age, married and American. Has worked on all kinds of wool and worsted and cotton mix goods and cotton worsteds. Is familiar with all kinds of machinery used in wet and dry finishing. Good references. 3536, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man 30 years of age, married, American. Worked on worsteds and woolens, both high and low grades, and all kinds of finishing machinery. First-class recommendations. 3503, Textile World Record, Boston, Mass.

Overseer of Finishing. Age 30, American, unmarried, with 6 years' experience as overseer, wants position in New England. Had experience on satinets, unions, and all goods where cotton warp is used, also on nearly all machinery used in making these goods. 3335, Textile World Record.

Overseer of Finishing. Position wanted by a man 46 years of age, married, American. Has worked on all kinds of woolens and worsteds, overcoatings, cloakings, dress goods, plushes, satinets and cotton warp fabrics. Is familiar with all kinds of finishing machinery. Good references. 3654, Textile World Record, Boston, Mass.

Overseer of Finishing or asst. supt. woolen mill. Position wanted by a man 50 years of age, married. Worked on all kinds of woolen goods, cotton warp, unions, etc. Familiar with all kinds of finishing machinery. Good references. 3875, Textile World Record.

Boss Finisher or Assistant Designer, or boss burler and sewer in a woolen mill. Position wanted by a man 25 years of age, married, American. Worked on kerseys, thibets, plain and fancy cheviots, cassimeres, homespuns, dress goods, flannels and various piece dyes. Familiar with Knowles' looms, Jaines, Hunter, Rodney, Hunt, Parks, Woolson, Curtis & Marble. Will not go West, South or Canada. Good references. 4012 Textile World Record.

Overseer Finishing, or Stock Dyeing and Finishing. Worked on Union cassimeres, satinets, all wool cassimeres, cheviots, dress goods, meltons and kerseys; 39 years of age; single; Scotch, with first-class reference from past employers. 3449, Textile World Record.

Overseer of Finishing. Position wanted by a man 41 years of age, married, American. Has worked on fancy cassimeres, unions, kerseys, cloakings, dress goods, friezes, cheviots, thibets, worsteds, etc. Is familiar with all kinds of finishing machinery. Good references. 2677, Textile World Record, Boston, Mass.

Overseer of Finishing and Dyeing. Worked on woolens, worsteds, men's wear and ladies' dress goods. For the past 7 years with a first-class mill; 39 years of age; good references. 1210, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing. Position wanted by a man, 35 years of age, American, married; worked on all kinds of woolen and worsted goods, kerseys, beavers and meltons. First-class recommendations. 3753, Textile World Record, Boston.

Overseer of Finishing. Position wanted by a man 38 years of age. Has worked on all kinds of worsted and woolen goods, and face finish finished goods. Is familiar with all kinds of finishing machinery. Good references. 3571, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man, 38 years of age, married, American. Has worked on kerseys, friezes, thibets and all kinds of woolen and worsted goods. Familiar with all kinds of machinery. First class reference. 3748, Textile World Record, Boston, Mass.

Overseer of Finishing in a woolen mill. Position wanted by a man 35 years of age, married, American. Worked on all classes of woolen and worsted goods, from highest to lowest grades. Familiar with all kinds of machines. Will not go West, South, Canada, Maine, Vermont, Pennsylvania. Good references. 4026 Textile World Record.

DESIGNERS.

Overseer of Finishing. Position wanted by an American, 40 years of age and married. Worked on all kinds of woolen and worsted goods and satinets. Familiar with all kinds of finishing machinery. 3475, Textile World Record, Boston.

Overseer of Finishing.. Position wanted by a man 30 years of age, married, American. Has worked on worsted serge cassimeres, flannels, overcoatings, cloakings, dress goods, meltons, kerseys, union, etc. Is familiar with all kinds of finishing machinery. Good references. 3668, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing. Position wanted by a man, 51 years of age, American, married. Has worked on all kinds of woolen goods and has had a wide experience on face finished goods. Is now employed in a large mill, but desires to make a change. Good references. 3861, Textile World Record, Boston, Mass.

Overseer of Finishing in a woolen mill. Position wanted by a man 28 years of age, American. Worked on all wool, wool and shoddy, cotton mixes, dress goods, kerseys, coverts, men's wear, etc. Familiar with all American makes of machinery. Will not go to New Jersey, Pennsylvania, West, South, or Canada. Good references. 3934 Textile World Record.

Overseer of Finishing. Worked on cotton unions, dress goods, cassimeres, beavers, kerseys, covert and army goods. First-class recommendations; 55 years of age. 1661, Textile World Record, Boston, Mass.

Assistant Designer. Position wanted by a man 21 years of age, American. Is a graduate of the Lowell Textile School, and has worked on all kinds of cotton goods, woolen and worsted dress goods and men's wear. First-class references. 3649, Textile World Record, Boston, Mass.

DYERS.

Chemist or Boss Dyer on hosiery or cotton goods. Worked on hosiery, underwear, yarns and cotton raw stock. Familiar with all kinds of dyeing machinery; 27 years of age; American; first-class recommendations. 3289, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man, 35 years of age, married, English. Has had a thorough training in chemistry. Has worked on wool, cotton and shoddy raw stock, piece dyes, yarn bleaching, scouring, extracting, etc. Familiar with alizarine colors, all kinds of dyeing and scouring machinery. First class recommendations. 3736, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 30 years of age, American. Has worked on worsted and cotton yarns, mercerized piece dyes, fast shades on raw stock and slubbing. Is familiar with all kinds of dyeing machinery. Good references. 3592, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 51 years of age, married, with A-1 references. Worked on stock for Traction and Army goods, Wood and Bisulphate Vats, Natural and Synthetical Indigo, also stock for cassimeres, blankets, robes, shawls, cotton, wool, shoddy mixes, cotton warps, mercerized effects. 3692, Textile World Record.

Overseer of Dyeing. Position wanted by a man 32 years of age, married. Makes a specialty of fast black on hosiery and yarns, rumble and silk finish, also fancy colors and bleaching. Is familiar with all kinds of machinery used in hosiery and yarn dyeing. Good references. 3559, Textile World Record, Boston, Mass.

Dyer. Worked on all classes of goods, woolens, worsteds, yarn, piece dyes, slubbing, blue vats and cotton mixes. An American; married. 3085, Textile World Record.

Fancy Dyer. Aged 37; American; married. Cotton, wool and silk. 3158, Textile World Record.

Dyer, Bleacher and Washer. Age 30; American; married. Cotton print goods in either the roll or garment, long and short hose, raw stock and yarn, aniline or oxidized black on hosiery. Good references. 3081, Textile World Record.

KNITTERS.

Knitting Mill Manager
or SUPERINTENDENT

Open for position December 1st.

By a practical Knit Goods man, in Underwear and Hosiery. Conversant with all details of manufacturing and costs. 15 years in one mill, last 9 years as manager. Address "Practical," care Textile World Record, Boston, Mass.

Overseer of Knitting. Position wanted by a man, 27 years of age, single, American. Worked on fleeces, fancies, balbriggan and open or mesh work, gauges from 12 to 32. Familiar with the Tompkins knitting machines, Universal and Foster camless cone winders, Huse's bobbin winders. Will not work for less than $3.50 per day. First class recommendations. 3746, Textile World Record, Boston, Mass.

Superintendent of a Knitting Mill. Position wanted by a man 55 years of age. Is experienced on all kinds of wool and merino underwear. Is familiar with all kinds of knitting machinery. Good references. 3620, Textile World Record, Boston, Mass.

Overseer of Knitting or assistant superintendent. Position wanted by a man, 20 years of age, single, German. Has worked on full fashioned seamless hosiery, full fashioned cut underwear. Understands cotton, Paget, knitting machines, German terrot loopers and Lamb machine. Good reference. 3775, Textile World Record, Boston.

Superintendent of a Hosiery Mill. Position wanted by a man 38 years of age, married, American. Worked on all classes of cotton seamless, ribbed and plain hosiery. Familiar with most all makes of circular seamless knitting machines, ribbers, loopers and sewing machines. Would prefer a good position in the South. Good references. 3905, Textile World Record, Boston.

Superintendent or Boss Knitter in a seamless hosiery mill.. Position wanted by a man with 12 years' experience on Standard B. & F. machines, also ribbers and loopers. Understands finishing goods. Good manager of help. Has been boss knitter in several large mills. Can furnish best of references as to character and ability. Age 31 years, married. 1450, Textile World Record.

Overseer of Knitting. Position wanted by a man 39 years of age, married. Worked on double and single plush, plain single thread wool; worked on spring needle, also run wool and cotton on latch needle machines, Thompkins spring, Snyder, Fisher, McMichael & Wildman, Stafford, Holt latch needle, Payne, Tompkins winders. Good reference. 4073, Textile World Record, Boston, Mass.

Overseer Boarding and finishing hosiery. All kinds of men's, women's and children's hosiery, except silk; age 41;; American; married. Can furnish references. 3035, Textile World Record.

Overseer of Knitting. Position wanted by a man 30 years of age, single. Worked on ladies' and gents' ribbed goods, shaped and plain. Familiar with Tiffany & Cooper cuff machines, Campbell & Clute machines, Scott & Williams, Smith & Fisher latch needle knitting machines. Will accept a position in New York state only. Good references. 3964 Textile World Record.

Second Hand in Knitting Mill. Position wanted by a man 21 years of age, American. Worked on all kinds of goods on latch needle machines. Familiar with the following makes of knitting machines: Nye & Tredick, McMichael & Wildman, Scott & Williams, H. Brinton & Co., Stafford & Holt. Could take a position at two weeks' notice. Good references. 3975 Textile World Record.

Overseer of Seaming. Position wanted by a man 27 years of age, married. Has worked on ladies' cotton hose and all grades of cotton underwear. Is familiar with Willcox & Gibbs, Hepworth, Campbell & Clute stitching, welting, looping, etc., machines. Good references. 3683, Textile World Record, Boston, Mass.

MISCELLANEOUS.

Overseer of Knitting in hosiery mill. Position wanted by single man 25 years of age; worked on ladies', misses' and men's half hose on Standard B. & F., Beatty, Hepworth Standard Loopers; Murphy, Merrow sewing machines; Wildman, Brinton ribbers; good references. 4055 Textile World Record, Boston.

Superintendent or Overseer of Knitting. Worked on all kind of goods made on circular latch needle machines, also ladies' and children's cotton hose. Understands Wildman, Nye & Tredick, Scott & Williams, Champion, Mayo knitting machines; Union Special Merrow, Champion Singer, Wheeler & Wilson Standard Chauvet, Coulter, Willcox & Gibbs sewing machines; good references. 4058 Textile World Record, Boston.

Overseer of Carding in cotton mill. Position wanted by a man 28 years of age, married. Familiar with white and colored numbers up to 16 H. K. Familiar with the following makes of machines: Platt, Mason, Whitin, Lowell, Providence, Kitson and Atherton. Good references. Will not go to Pa., N. J., Western or Southern States, or to Canada. 3951, Textile World Record.

Overseer Ring and Mule Spinning. Position wanted by a man, 45 years of age, married, English. Worked on all kinds of cotton, both fine, coarse from 1s to 200s. All kinds of cotton spinning machinery. Good references. 3850, Textile World Record, Boston.

Overseer of Carding or Spinning in a cotton mill. Position wanted by a man 39 years of age, married, American. Worked on white and colored goods. Familiar with Whitin and Lowell machines. Will not go to Canada, New York, New Jersey or New England States. Good references. 3997 Textile World Record.

Overseer of Carding, or Second Hand in a large mill. Position wanted by a man 36 years of age, married, English, worked on all kinds of yarns—both plain and novelty, shirtings, sheetings and print. Familiar with Saco and Pettee cards and speeders, Lowell, Woonsocket frames, American and English carding machinery. 3696, Textile World Record.

Overseer of Dyeing. Position wanted by a man, Swedish, 35 years of age, married. Has worked on worsted yarns, raw stock, wool and all kinds of cotton raw stock, piece dyeing, union dyeing and warp dyeing and sizing. 3491, Textile World Record, Boston.

Overseer of Cotton Bleaching, Singeing or Gray Room. Position wanted by a man, 26 years of age, English, married. Has worked on all kinds of cotton piece goods, familiar with all kinds of machines used in the handling of these goods. First-class reference. 3766, Textile World Record, Boston.

Designer in a Cotton Mill. Position wanted by a man, 33 years of age, English; has worked on ladies' dress goods, shirtings, ginghams, lenos and jacquard patterns. Will not go west, south or Canada. Good reference. 3780, Textile World Record, Boston.

Second Hand over Warping and spooling in a cotton mill. Position wanted by a man, 60 years of age, widower; worked on tickings, awnings, shirtings, flannels, sail cloths, prints, etc. Will not go south. Good reference. 3778, Textile World Record, Boston.

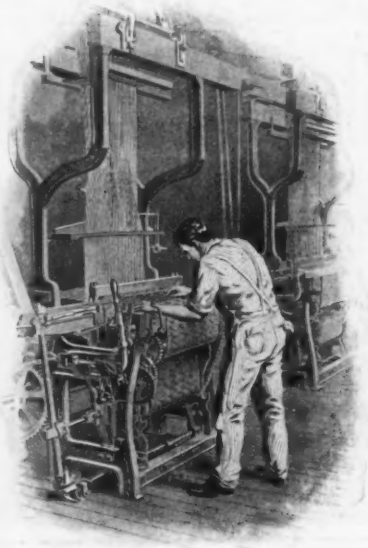
Foreman for Aniline Black Department, all silks, cotton, black and taffeta umbrella goods. Age 32; English; married; first-class references. 3238 Textile World Record.

Overseer of Bleaching. Position wanted by a man 34 years of age, English, married. Has worked on cotton bed quilts, marcellus and crochet, also yarns. Familiar with the Butterwortg machines. Could be employed at short notice. Will not go West or Canada. Good reference. 3836, Textile World Record, Boston, Mass.

Overseer of Cotton Finishing. Position wanted by a man 37 years of age, married, Swede. Has worked on all kinds of cotton goods, plaids and stripes, in all departments of the finishing room. Is familiar with Butterworth finishing machinery. Good references. 3638, Textile World Record, Boston, Mass.

Overseer of Carding and Frame Spinning. Worked on all kinds of stock, both high and low. 30 years of age; first-class recommendations. 1759, Textile World Record.

Weavers Become Designers



Weavers and loomfixers can become designers, and other textile workers can qualify for overseers' and superintendents' positions by obtaining a thorough technical textile education in their spare moments without leaving home or their present employment.

Modern manufacturing conditions are such that the untrained textile worker has little or no chance for advancement. To win success, promotion, and increase your remuneration you must study—others are studying and unless you do, they will most surely outstrip you.

Are you competent

to be a designer, a superintendent or an overseer? Put the question to yourself fairly and squarely and answer it honestly. Had you not better study and prepare yourself for filling a responsible position and increasing your salary?

It is our business to raise salaries.

That sounds remarkable, but we have raised thousands of salaries. We can raise yours too if you will not stand in th path of your own progress. Remember, you must have technical training to keep abreast of modern methods. Won't you write today for information as to how we can raise your salary, stating the particular line of textile manufacturing in which you are interested? Do it now — others are advancing, while you are standing still. Address

Textile Department
International Correspondence Schools
New Bedford, Mass. Box 836.

It Sometimes Happens

that Wyandotte Textile Soda facts are confused with general alkali statements.

Every mill man who fails to make this distinction is depriving himself of a profit in no small amount. You ask yourself, how is it—just because Wyandotte Textile Soda is able to show results in the quality and finish of your output that no other alkali can possibly produce.

It is only reasonable that Wyandotte Textile Soda should do the unusual. It is not a general chemical but a special article made for specific uses.

A man is a man, but you would not consider employing a tanner as your chief wool scourer, nor an engineer as the superintendent of your dye house. Neither is it fair to suppose Wyandotte Textile Soda no different from other sodas merely because it is a member of the soda family.

None Genuine except with a card bearing this Trade Mark

In Every Barrel.

We only ask for Wyandotte Textile Soda a fair trial. The fact that it does possess special properties that make it of unusual value in wool and cloth scouring and fulling, soap building, acid neutralizing, and in setting and brightening of colors will be easily proved to your entire satisfaction.

Order from your supply house.

The J. B. Ford Co., Sole Mfrs. Wyandotte, Mich.

THIS SODA HAS BEEN AWARDED THE HIGHEST PRIZE WHEREVER EXHIBITED.

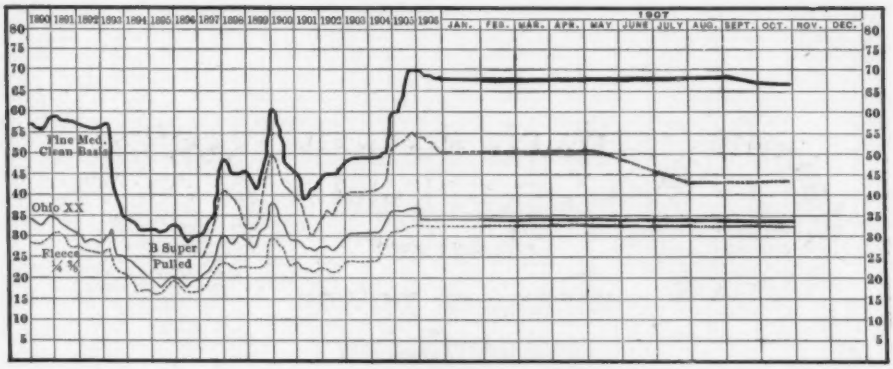


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

The Wool Market.

The financial disturbance has had less effect in the wool market than in any other of the textile markets. This is due largely to the fact that the stock of wool is held by strong hands. The large mills have within a few months taken over a large part of the last clip, thus relieving the dealers of a corresponding part of the burden of carrying the stock. As a consequence prices have held firmly during the month. Sales have been small and confined to the smaller manufacturers who are buying only for immediate requirements. While the market is outwardly strong and in a sound condition, there is much uneasiness as to the developments of the near future. Political agitation is feared, and the talk about tariff revision is of especial influence in the wool trade. Foreign markets are firm, and reports from Australia are especially bullish, in spite of the large clip and favorable season for the growth of wool.

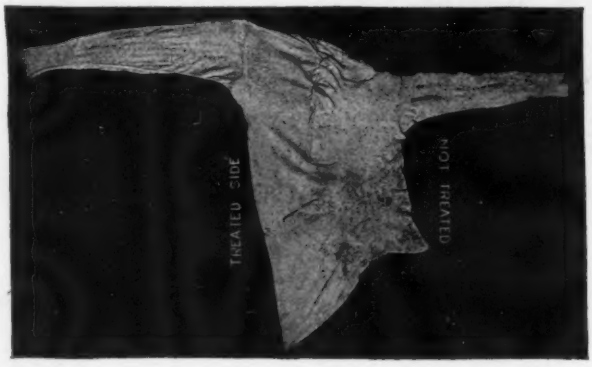
Clothing wools in the domestic market are still neglected, awaiting the return of the carded woolen fabric to popularity, an event that seems as far off as ever.

Connecticut, Montville. The Monarch Woolen Mills are shut down indefinitely owing to dullness in the market on their line of goods.

Connecticut, Staffordville. The plant of the Garland Woolen Company has been shut down indefinitely. Men's wear goods are manufactured.

Massachusetts, Millville. Frederick J. Crook, who started a number of looms on commission weaving in the old Ironside Mill, last May, has given up the project and is now employed at the Nasonville Woolen Mill as boss weaver.

TRADE IS DEMANDING NON-SHRINKABLE WOOL



BECAUSE THE

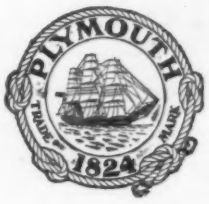
FOR WOOL
Never-Krink
PROCESS
Registered

IS WORKING A REVOLUTION

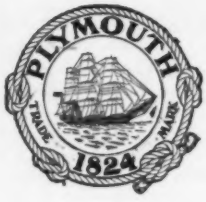
GET IN LINE

For information write

CHARLES H. HEYER
REAL ESTATE TRUST BUILDING
PHILADELPHIA, PA.



By far the most efficient and cheapest means of power transmission



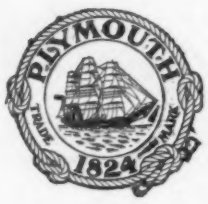
Plymouth Manila Rope Drives

At 2-5 the cost for installation as compared with leather belting, rope drives are far more effective, safer, transmit large or small horse power in any direction, provide for future growth and greatly lessen maintenance expense.

Plymouth Rope Drives by their absence of slip, steadiness, freedom from electrical disturbances, great durability and low cost make the ideal drive for textile mills.

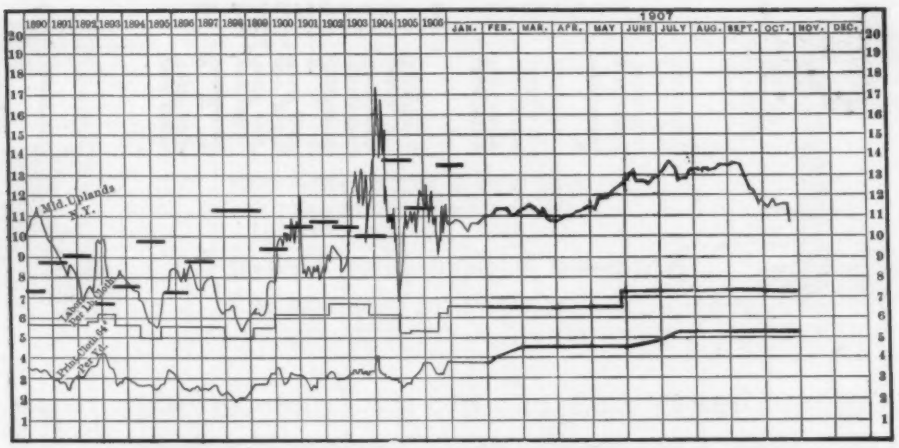
Put your transmission problems up to us. Our long experience in manufacturing, installing and using rope drives is at your service.

Send for our booklet on "Rope Driving."



Plymouth Cordage Co.

No. Plymouth, Mass.



The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.
CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

The Cotton Market.

The scarcity of money has been the principal cause for the decline in the price of cotton. Spinners both at home and abroad have kept out of the market, leaving the whole load of carrying the new crop on the shoulders of the Southern planters and cotton bulls. This at a time when crop is being ginned and made ready for sale at the most rapid rate. The result has been a marking down of prices in the world's markets, and the sentiment is general that still lower prices are to come. Time alone can determine whether this view is the one based on actual conditions. The uncertain factor is found in the causes for the decreased movement into sight since Sept. 1. Here are the figures for a series of years, as compiled by the Chronicle:

1902, Oct. 31	3,217,573
1903, Oct. 30	2,644,353
1904, Oct. 28	3,493,507
1905, Oct. 27	2,998,451
1906, Oct. 26	2,857,835
1907, Oct. 25	2,282,681

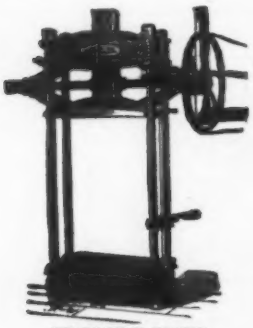
With the movement into sight 700,000 bales behind that for 1905, when the crop was only 11,500,000 bales, it would be well for spinners to remember that a scarcity of money in Wall Street does not make cotton in the South. They should remember that the decrease in the movement into sight may be due not only to the holding of cotton for higher prices, but to an actual shortage of cotton.

The world's visible supply, as estimated by the Chronicle on Oct. 25, is as follows:

	1907	1906	1905	1904
American	2,257,127	2,264,679	2,942,175	2,464,383
All other	777,000	752,000	722,000	491,000
Total	3,034,127	3,016,679	3,664,175	2,955,383

*Texas, Abilene. Several prominent men in this place are again agitating the subject of cotton mills. It is stated that a study is being made of the Wetherford Cotton Mills, Wetherford, Texas, with a view to planning as up-to-date a plant as possible.

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes,
SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES.
Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.



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BOOMER & BOSCHERT

BALING PRESSES

ARE THE STANDARD

Hydraulic or Knuckle Joint
Any Size .. Any Power

Boomer & Boschert Press Co.

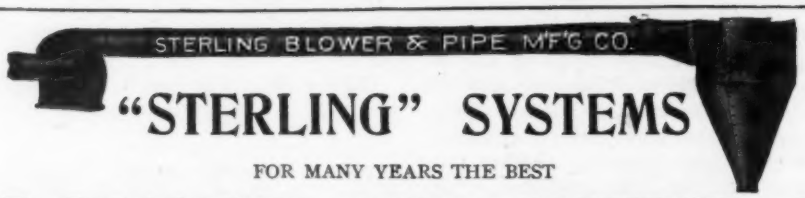
338 West Water S., SYRACUSE, N. Y.
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

HYDRAULIC.

Handles heavy cases in a Time-Saving Way—The Economy Steel Tiering Machine

Goods are put in place with ease and economy. The largest amount of stock can be stored in the smallest possible space and yet be instantly accessible. In use in representative mills. Investigate its merits and 'twill be in use in yours. Write for prices.

Economy Engineering Co. 58-64 N. Jefferson St. Chicago, Ill.



"STERLING" SYSTEMS

FOR MANY YEARS THE BEST

DUST COLLECTING, WOOL CONVEYING, ETC.

STERLING BLOWER & PIPE MFG. CO.

Write for "1907" Catalog.

HARTFORD, CONN., 1027 Huyshope Ave. New York Office, 109 Liberty St.

Your Safety Depends on the Efficiency and Strength of Your Valve.
BETTER BE SAFE THAN SORRY.

Water-Relief Valve.

BUY CROSBY STEAM APPLIANCES WHICH ARE RELIABLE

WRITE FOR CATALOGUE.
Steam Engine Indicators
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Single Bell Chime Whistles
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Pressure and Vacuum Gages
Water Gages, Gage Glass, Etc.

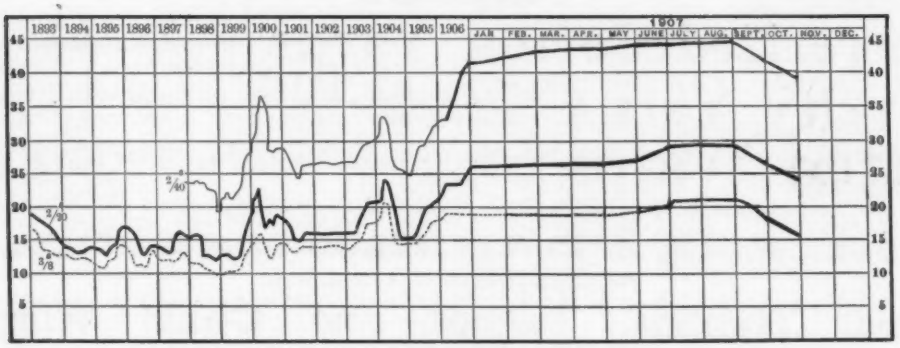
ENGINE—BOILER AND MILL SUPPLIES

Pop Safety Valve

CROSBY STEAM GAGE AND VALVE CO.

Stores, BOSTON, NEW YORK, CHICAGO, LONDON. Office and Works, BOSTON, MASS.

Yarn Department.



GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

The Cotton Yarn Market.

Cotton yarn has shared in the disturbance of the markets on both sides of it, for raw material and finished goods. The chief difficulty is a loss of confidence on the part of buyers. Low prices do not attract them, as they fear that goods will go to a still lower level of values. The money pinch is another unsettling influence. As a result of them all business is confined to immediate requirements. When orders are given the call is for prompt delivery. Probably the trade is the victim of exaggerated fears. Actual conditions are in all probability better than is generally supposed, but in the meantime the belief that business is on the decline is having the same effect as the reality would have. We quote as follows:

Eastern Cops.

6s	19¾
8s	20¼
10s	20¾
14s	21¾
16s	22¼
18s	23¼
20s	24¼
22s	25
24s	25½
26s	26½
30s	28
34s	29
36s	32
40s	34

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	21½
14s	22
18s	23½
20s	24½
24s	26
26s	27
30s	29
36s	33
40s	41
45s	45
50s	51
55s	55
60s	59

Eastern Two-Ply Warps, Carded Peeler.

2/30s	33
2/36s	37
2/40s	42
2/45s	47
2/50s	52
2/60s	61

Egyptian Weaving Yarns. Single Skeins Combed.

30s	45
36s	47
40s	49
45s	52
50s	56
55s	59
60s	66
70s	72

Pennsylvania, Philadelphia. The Bromley Bros.' Carpet Mills, Jasper and York Sts., which are now used as tenement mills, have been sold by Thomas Bromley, Jr., to J. Harper Dripps, who in turn conveyed the property to George Bauer. In the first conveyance the consideration was $4,000, subject to a mortgage of $106,000, and in the second it was $7,220.93, subject to the same mortgage.

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

MONUMENT MILLS,

Manufacturers of

White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS. 4s to 60s.

WOOL NOILS WASTE

COTTON YARNS

Members of the National Association of Cotton Manufacturers and the Delegates to the International Cotton Conference, when in Philadelphia, the largest textile manufacturing centre in this country, are invited to call at the largest Commission House in this vicinity.

Don't forget the address,

116-118 CHESTNUT STREET, PHILADELPHIA

The Philadelphia Market.

The demoralized condition in the stock market and money market has extended into the yarn trade, and prices have declined rapidly during the past few weeks. Business has been bad, as it always is on a declining market. Customers are more afraid to buy yarn on today's level than they were three months ago at from 4 to 8 cents more than is being asked today. Cotton is also declining in price, and all together the market is thoroughly unsettled.

Prices on yarn are at a more reasonable level today, and manufacturers ought to be in position to secure business. The knitting trade has been in better condition than the weaving trade, which is almost the reverse of conditions wihch were existing in the early spring and summer. Trade on heavy weight underwear has been better than on light weight. Most hosiery mills are busy preparing for January shipments. Prices are so unsettled that it is hard to say just what the market is on any particular number. Quotations are as follows:

Southern frame spun cones:—

7s and coarser	19
8s and 9s	19
10s	20
12s	20½
14s	21
16s	21½
18s	22
20s	22½
22s	23
24s	24
26s	24½
30s	25½
40s	39
50s	51

Southern high grade mule yarn:—

Cones.

10s	22
12s	22½
14s	23
16s	23½
18s	24
20s and 22s	24½
24s	25

Southern frame yarn, lower grades:—

6s and 8s	18½
10s	19

Eastern cones (high grade quality):—

10s	23
12s	23½
14s	24
16s	24¾
18s	25¼
20s and 22s	26-26½

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
73 Leonard Street, NEW YORK.
Brown Building, 185 Summer Street, BOSTON, MASS.
25 South Tryon Street, CHARLOTTE, N. C.

CATLIN & CO.,
Cotton Yarns
345 Broadway, NEW YORK.
67 Chauncy Street, BOSTON.
306 Chestnut Street, PHILADELPHIA.
605 Medinah Temple, CHICAGO.

Harding, Whitman & Co.,
Dry Goods Commission Merchants,
COTTON AND WORSTED YARNS.
BOSTON. NEW YORK. PHILA.
CHICAGO. BALTIMORE. ST. LOUIS.

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COMMISSION MERCHANTS
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TOLAR & HART
Cotton Yarns and Cotton
TEXTILE BUILDING
Members of New York Cotton Exchange
66-72 LEONARD ST. NEW YORK

Fred Sternberg & Co.
530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

E. D. LORIMER & CO.
COTTON YARNS } ALL NUMBERS
MERCERIZED YARNS } FOR ALL PURPOSES
346 BROADWAY, NEW YORK.

LUDWIG LITTAUER,
SUCCESSOR TO
MOELLER & LITTAUER, 109 Greene St., New York
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
SILK MILL, BOONVILLE, N. Y.

G. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS

Fitchburg, Mass.

Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

JENCKES SPINNING CO.

Main Office and Mills at Pawtucket, Rhode Island.

Carded and Combed Cotton Yarns for Weavers and Knitters.

Double and Twist Yarns for Woolen Trade.

Philadelphia Office, Mariner and Merchant Building, Third and Chestnut Streets.

GRANT YARN CO.,

COMBED AND CARDED COTTON.

YARNS 40's and above. AND

FITCHBURG, MASS. **WARPS**

Ballou Yarn Co.

PROVIDENCE. R. I.

Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers

GASSED YARN SPECIALTIES

EDDY & STREET,

Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

Scranton Yarn Finishing Co.

SCRANTON, PA.

Dyers of Skein Silk, Pure Dye and Weighted.

Mercerizers, Dyers and Coners.

THE RAVINE MILLS CO.

MANUFACTURERS OF

COTTON WARPS

In White and Colors on Beams and Jackspools

Specialty of Fast Black Twist on Jackspools.

VERNON, CONN.

C. M. BLAISDELL, Pres. and Treas. G. A. BLAISDELL, Vice-Pres. and Sec'y.

Established 1860—Incorporated 1893.

THE S. BLAISDELL, JR., CO.,

COTTON, EGYPTIAN PERUVIAN

American Long Staple a Specialty. Shipments direct to mill from Egypt, Peru and all American Southern Points.

CHICOPEE, MASS.

Cotton Waste Purchased on Yearly Contract from Mills.

Reels for Cotton WOOLEN AND WORSTED

Patented Hosiery Winders, Cop Winders and Spoolers.

LINDSAY, HYDE & CO.,

2124 to 2130 East York St., PHILADELPHIA, PA.

The Pioneer Ticket Company

722 Broadway, New York City

Request the TEXTILE TRADE to write for estimates on their SPECIAL PRINTING. Up-to-date machinery. Big outputs. Small profits. Ask us for prices on OUR SPECIALTY, LOOM TICKETS in rolls, GOOD PERFORATIONS.

Skein yarn (mostly Southern):—

4s and 8s soft	17
10s and 12s	18
14s to 20s	18½-20
22s	20½
14/2	18
16/2	19
20/2	21
30/2	23
40/2	37
16/3 slack	19
12/3 slack	18½
8/3 carpet	17½
8/3 slack	17½
9/4 slack	17½

Warps (Southern):—

10s to 12s	18-18½
14s	19
16s	20
20s to 22s	20½-21
26s	22
14/2	19
16/2	20
20/2	21
24/2	22½
30/2	23½
40/2	37

Mixed colored yarns (mock twist, half colors):—

6s to 10s	20-20½
12s to 14s	21-22
16s to 18s	23-24

Mock Egyptian, 2c. advance over white.

Egyptian, 7 to 8c. above best quality white.

*Pennsylvania, Philadelphia. The plant of the Star & Crescent Mills Company, which went into the hands of a receiver early in July, is for sale.

Pennsylvania, Reading. The Pennsylvania Knitting Mills of Reading, Inc., is in financial difficulties, growing out of the proceedings against Otto Heinze & Co., Bankers, of New York. An attachment for $4,556 against the property has been served in favor of Catlin & Co. for yarns. Otto C. Heinze is president of the company; Max H. Schultze, treasurer; and H. Rech, secretary. The company is capitalized at $500,000. Men's, women's and children's seamless hosiery in cotton, worsted and silk are manufactured on 450 knitting machines.

South Carolina, Clinton. A number of prominent citizens are considering plans for forming a third cotton mill in this city. It is expected that a plant of 10,000 spindles for the manufacture of cotton yarns will be erected and capitalized at $150,000. D. M. Patrick, H. A. Grady and L. A. Bethune are interested in the project.

LINEN YARN IMPORTER.
HUGHES FAWCETT, 115 Franklin Street, NEW YORK.
Flax, Hemp and Jute Line and Tow Yarns,
For Weaving Purposes.
Linen Jacquard Harness Twines,
Fine Cotton Harness and Heddle Twines,
For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

DUNCAN & YOUNGS
95 Worth Street, NEW YORK
Practical Manufacturers of
YARNS, THREADS, TWINES, CORDS, ROPE
AND MILL SUPPLIES
Anything in the line you cannot get anywhere else apply to us.

C. MOORE & CO.,
Manufacturers of
TWINES, THREADS AND YARNS
Jacquard Harness Twines of all kinds
on hand and made to order.
S. W. Cor. Fifth and Market Sts., Phila.

Mercerized and Plain
Skein, Warps,
Cones, Cops,
Tubes
COTTON YARNS
426 and 428
Market St., Phila.
Theo. H. Strouse & Co.

FRANK A. TIERNEY,
TOPS, NOILS, ROVINGS, YARNS.
Wool, Silk, Mohair, Camels Hair, Ramie.
Garnetted Stocks
Silk also Ramie Tops and Noils, Ramie, Silk, and
Silk Noil Yarns,
Special Textile Fibres and Novelties.
Wool Exchange Bldg., 260 West Broadway, New York.

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Textile World Record
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Pocasset Worsted Company,

WORSTED YARNS

IN THE GRAY.

Mills at Thornton, R. I.

Office 100 Boylston St., Boston, Mass.

French System. Bradford System.

B. F. BOYER CO.,

MANUFACTURERS OF

WORSTED AND WOOLEN YARNS,

Office and Mill, River Ave. and Marlton St. CAMDEN, N. J.

Woolen and Merino YARNS

Eaton Rapids Woolen Mills,

EATON RAPIDS, MICH.

Bradford System French System

STEPHENSON & CO.

Worsted and Woolen Yarns

240 Chestnut Street

PHILADELPHIA.

WORSTED YARNS

RICHARD CAMPION.

SELLING AGENT FOR

Bristol Worsted Mills,

Highland Worsted Mills.

The French Worsted Co.

300 Chestnut Street,

PHILADELPHIA, PA.

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MANUFACTURERS OF

FANCY YARNS and POLISHED THREADS.

Offices: 229 Chestnut St., Philadelphia.

Mills: Frankford, Pa.

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Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

Spool Tapes a Specialty.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

F. W. MAURER & SONS CO.

MANUFACTURERS OF

TAPES, BINDINGS, NARROW FABRICS AND EDGINGS FOR NOVELTY CURTAINS

Office, 528 Cherry St. Factories, 529 & 531 Arch St. and 524 Cherry St., and Germantown Ave. & Bristol St.

PHILADELPHIA

HOFFMAN, DeWITT & McDONOUGH CO.,

Diamond Stay Bindings TRADE MARK

Manufacturers of

Tapes, Webbing and Bindings.

COTTMAN and G STS., PHILADELPHIA

Ryer's Station, P. & R. R. R.

Bell Telephone, 203 Cheltenham.

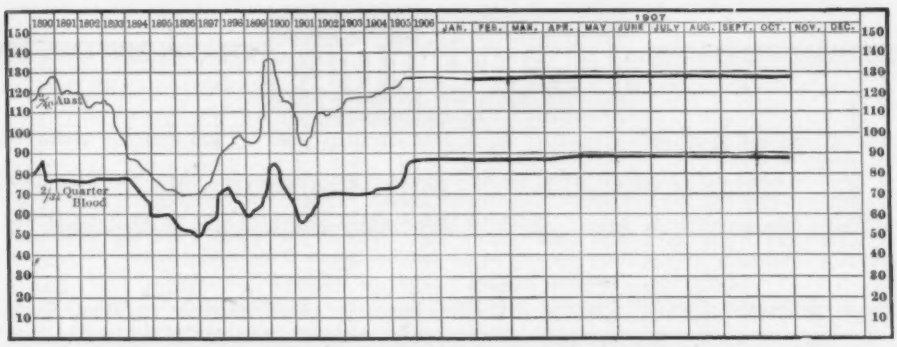


CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

The Woolen and Worsted Yarn Market.

The condition of affairs in the woolen and worsted yarn market at this time is reported by many of the spinners as being unsettled all along the line. The prevailing opinion is that there will be an advance in prices for all classes of yarns. This, the spinners state, is due to the recent advance made in London on all grades of wool. Manufacturers who did not take advantage of this prediction, when made a month ago, when they place future orders will find that they will have to pay more for their yarns than heretofore.

The general condition of the dress goods trade is not so brisk as in the past at this time of the year, but there seems to be a better inquiry for yarns along the lines of single 20s to 50s. The same thing applies to 2-ply yarns, the largest demand being for 2/36s to 2/60s.

The men's wear trade is not in as good a condition as it should be at this time. There is some demand for yarns, but the business placed is not near what it should be. This is even more pronounced than in the dress goods trade. The numbers asked for are 2/40s down to 2/20s, but the buying is on a hand to mouth basis.

Rain cloth yarns are very little in demand, but manufacturers of this class of goods expect a little more activity within a short time. Prices have not changed for some time and manufacturers when they place their orders will find that they can buy at the old figures.

The fancy knit goods and sweater manufacturers are finishing up their season and have not had as yet time to start on next season's goods. All are working on present orders and buying from hand to mouth to finish the business on hand. Western business seems to have dropped off to some extent. Knitters in the East are still busy on original orders, but are still working on yarn already contracted for and which they are still receiving from the spinner. Underwear mills, it is reported, are doing a good business, but orders from this end are not expected for a month or so.

Spinners have all the business they can handle and in many instances are installing new machinery in order to increase their plants to enable them to handle the business they already have on hand and to be in readiness to push orders which are sure to come in in greater volumes when trade becomes more brisk and manufacturers are in need of immediate deliveries. We quote as follows:

BRADFORD YARN.

2/12 to 2/16 low common	75-77½
2/26 to 2/28 common	77½-80
2/12 to 2/20 1/4 blood	82½-85
2/26 to 2/28 1/4 blood	85-87½
2/32 1/4 blood	87½-90
2/20 3/8 blood	90-92½
2/26 3/8 blood	95-97½
2/36 3/8 blood	97½-1.00
2/40 1/2 blood	1.15
2/40 delaine	1.21-1.22½
2/50 delaine	1.27½
2/40 Australian	1.30
2/50 Australian	1.37½
2/60 Australian	1.50
2/24 lustre	85
2/28 lustre	85-90
2/30 and 3/32 lustre	90-92½
2/36 lustre	95-1.00
1/24 worsted and 80s single cotton for raincloths	1.00-1.05
1/24 worsted and 120s single cotton for raincloths	1.15-1.20

FRENCH SPUN YARN.

1/20 1/4 blood	85-87½
1/20 high 1/4	93-95
1/20 3/8 blood	1.00-1.02½
1/20 high 3/8	1.05-1.07½
1/20 1/2 blood	1.12½-1.15
1/30 high 1/4 blood	95-97½
1/30 3/8 blood	1.05-1.07½
1/30 1/2 blood	1.12½-1.15

TRADE MARK REGISTERED IN
NON-FLUID OILS
UNITED STATES PATENT OFFICE

The Cost of Lubrication is the cost of lubricants *plus the cost of power wasted in overcoming friction.*

The most economical lubricant is that which best reduces friction—not that which lasts the longest. Oils reduce friction but drip and spatter and damage goods. Grease is not wasted but it increases friction because of its heavier "body." **Non-Fluid Oils** do not not drip, do not waste and *do* reduce friction. We can prove this to your satisfaction. Send for *free* samples and test these truly economical lubricants. Write also for a copy of our new booklet on modern lubrication.

ORIGINATORS AND SOLE MANUFACTURERS OF NON-FLUID OILS.

New York & New Jersey Lubricant Co., Dept. H, 14-16 Church St., New York City.

1/40 1/2 blood	1.17½-1.20
2/50 1/2 blood	1.30-1.32½
1/50 delaine	1.22½-1.25
1/40 Australian	1.32½-1.35
1/50 Australian	1.37½-1.40
1/60 Fine Australian	1.40-1.45
1/70 Fine Australian	1.45-1.50

Connecticut, Meriden. It is reported that the Meriden Woolen Company will shut down its plant indefinitely.

Georgia, Montezuma. The Montezuma Mfg. Co. will install a bleachery for bleaching knit goods in the piece. They make women's cotton underwear and operate about thirty machines.

Rhode Island, Woonsocket. It is reported that Joseph Grennon, part owner of the Reeves Spinning Co., has sold his share in the concern to Frank B. Simmons, and that the Reeves Spinning Co. will be incorporated with R. J. Reeves as president and manager and Frank B. Simmons as treasurer and secretary. No stock in the new company will be offered to the public. 8s and 20s flax yarns are manufactured.

*South Carolina, Cross Hill. M. S. Bailey, president of the Lydia Cotton Mills, Clinton, has bought the plant of the Cross Hill Oil & Hosiery Mill for $5,000. As reported in July, the Cross Hill Oil & Hosiery Mill was declared bankrupt and shut down. It is not known what disposition Mr. Bailey will make of the plant.

Texas, Waco. F. A. Winchell is offering for sale all the machinery of the Waco Knitting Mill for making rib underwear. There are 28 knitters, which have been run less than one year.

*Wisconsin, Appleton. An offer has been made to the Fox River Valley Knitting Company of Menasha to remove its plant to this place. They are considering enlarging their plant and this city provides excellent facilities for their expansion. Men's hosiery is manufactured on 62 knitting machines.

Texas, Houston. A number of foreign delegates to the Atlanta Convention visited this city and looked into the advantages for cotton manufacturing.

WILLIAM B. CHARLES,
Cotton Yarns,
Cotton Cloth,
Silesia, Sateens,
For the Underwear Trade.
AMSTERDAM, N. Y.
Boston Office, 200 Summer St.

EDWIN F. SCHOFIELD
ALL GRADES
PULLED AND FLEECE WOOLS
FOREIGN NOILS, CARPET WOOLS.
COTTON WASTE
New York Office 256 Church Street
Mariner and Merchant Building,
3d and Chestnut Streets, Philadelphia, Pa.

JOSEPH M. ADAMS CO.
WOOLEN YARNS,
Carpet Backing and Rug Yarns a Specialty.
ARCOLA MILLS,
Main St., foot of Centre St., Manayunk, Philadelphia.

Knitting and Weaving
YARNS.
Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment.
EDWARD S. HYDE,
226 CHESTNUT STREET,
Philadelphia, Pa.

CHENEY BROTHERS

Silk Manufacturers. So. Manchester, Conn.

Trams, Organzine and Spun Silks in the hank, or on spools and cones for woolen manufacturers.

Silks for electrical uses, insulation and special purposes made to order.

Knitting Silks, Ribbons and Piece Goods for Trimming Knit Goods.

Dress Silks, Satins, Linings, Printed Pongees, Foulards and Decorative Silks; Upholstery Goods, Ribbons, Sashes, Plushes and Velvets.

WILLIAM RYLE & CO.,

Foreign and Domestic

Spun Silk Yarns and Noils.

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., NEW YORK.

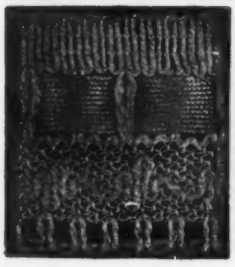
SAUQUOIT SILK MFG. CO.,

INSULATING AND BRAIDING SILKS.

ORGANZINE, TRAM & HOSIERY SILKS.

Fast Dye Organzines for Woolen Manufacturers a Specialty.

Mills: Bethlehem, Pa., Phila., Pa., Scranton, Pa. New York Representatives, Wm. Ryle & Co., 54 Howard St.—Phila. Office, 4015 Clarissa St., Nicetown.—Chicago Office, 210 Monroe St.—Boston Office, 78 Chauncy St.



GEORGE W. CHAPIN,

BRAIDS Cotton, Worsted, Mercerized, Cotton and Silk Twilled. **TAPES** Common, Twilled, Superfine and Plain 18 to 32s, white and colors on spools.

YARNS Cops, Skeins, Warps, Tubes and Cones. **THREADS** on Spools, Tubes, Cones, Unbleached, Bleached and Colors for Manufacturers' use.

CROCHET LACE EDGINGS Latest Styles in Point Laces.

229 Church Street 231 . . PHILADELPHIA

FOR ALL PERMANENT BUILDINGS.

IT is significant that Barrett Specification Roofs are almost invariably adopted for buildings with large roof areas such as factories, railroad buildings, etc., where the cost and durability of materials must be carefully considered.

An example of this is the well-known Allis-Chalmers plant, illustrated herewith. All the recently erected buildings carry Barrett Specification Roofs, amounting in all to about 300,000 square feet.

A Barrett Specification Roof in a typical instance (King Phillip Mill, Fall River) was recently renewed after thirty years of service.

Its original cost was less than any style of metal roofing would have been. Tin or sheet iron would have required continual painting, and even then would have been liable to rust and corrode, causing loss by leaks. A ready roofing with its narrow laps and exposed nailing would have been entirely unadapted for use on a building of this type, where the roof is of moderate pitch.

The cost per square foot per year of service in the case of Barrett Specification Roofs is remarkably low; first, because the original cost is always moderate, and second, because the maintenance cost, as a rule, is nothing, as such roofs require no painting or protection of any kind. In the case of the King Phillip Mill, for instance, the total cost was only about one-fifth of a cent per square foot per year.

Low cost and satisfactory service have made Barrett Specification Roofs more largely used than any other kind.

The Barrett Specifications in pocket edition form will be mailed free on request to anyone interested.

Barrett Manufacturing Co.

New York Chicago Philadelphia Cleveland Cincinnati Minneapolis Boston
St. Louis Allegheny Kansas City New Orleans London Eng.

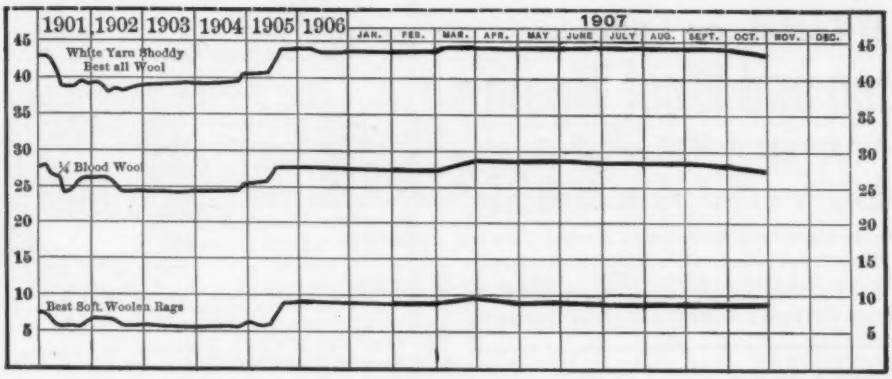


CHART SHOWING RANGE OF PRICES OF SHODDY, RAGS AND NOIL.

The Rag and Shoddy Market.

The markets have continued dull, the sales being confined to small lots for immediate requirements. The unsettled condition of other markets has had little effect on the rag and shoddy markets which have been depressed so long and continuously. There has been some expectation of a revival of demand for wool substitutes during the heavy weight season, but this influence is likely to be counteracted by various adverse factors. Until there is a better demand for the carded yarn cloth, rags and shoddy will continue to drag in the market as they have for several years. The woolen mills are having a poor season, and are using much less stock of all kinds than has been consumed in former years. The trade in wool waste is in the same depressed condition. Prices on all kinds of stock are held up well, because it is well known that a reduction would not result in business.

SHODDIES AND EXTRACTS.

White yarn, best all wool	40
White knit, all wool, best fine	35-40
White knit, No. 2	28-30
Light yarn, extra fine	25-28
New pure indigo blue	24

Merino.

Fine light, all wool	26-28
Medium light, all wool	18-20
Fine black, all wool	26-28
Fine dark, all wool, best grade	22-25
Medium dark, all wool, No. 2	15-17
Red knit stock, strictly all wool	22-24
Red flannel, all wool	22-24
Dark blue for hosiery, strictly all wool, No. 1	18-20
Dark blue for hosiery, not all wool, No. 2	16-18

WOOLEN RAGS.

Fine merchant tailors	10-11
Choice light colors	13-14
Browns	11-12
Blacks	9½-10
Fine blues, plain	9-10
Fine dark	11-12½
Medium dark	7-8

Worsteds.

Blue	16-18
Black	21-23

Serges.

New black	16-18
New blue	15-17

Flannels.

New scarlet	18-19
New blue	15-16
Cloakings	3-3½

SOFTS AND KNIT STOCK.

Soft woolens, best	6-6¾
Old white flannels	16-19
Old red flannels	13¼-14
Old blue flannels	6-7
Old plaids	4½-5
White stockings	24-25
White hood stock	18-20
Clear hoods	10-11
Blue stockings	9¾
Fancy stockings, No. 1	9½
Gray stockings	9-10
Black stockings	9-10
Knit stock comforters	7-8
Red knit	12-12½
Light gray knit	9-10
New light fancies	10
New fancies	12-13

Merinos.

Light, fine	14-15
Light, coarse	7-7½
Fine, dark	13-13½
Coarse, dark	5-5½
Blue	11-12
Black	13-14

FLOCKS.

Shear, fine white, all wool	9-11
Fine indigo blue, all wool	8-9
Fine black and blue, all wool	6½-7

WILLIAM B. CHARLES,
Cotton and Wool Wastes
Amsterdam, N. Y., U. S. A.

COTTON YARNS.

Contracts made with Cotton and Woolen Mills for Yearly Waste Production. Correspondence solicited. Shepperson's Code, 1878. Cable Address "Charles."

Boston Office: 200 Summer Street.

SHODDY W. H. H. SLACK & BRO. SPRINGFIELD, VT.
Established 1871 FLOCKS

M. B. SCHWAB, Pres. H. RAWITSER, Treas.
ED. GLUECK, Sec. and Gen. Mgr.
RIVERDALE WOOLEN CO., MANUFACTURERS OF
.. Shoddies ..
of every description. Capacity 7,000,000 pounds per annum.
Custom Carbonizing and Garnetting a Specialty.
New York Office: 140 DUANE STREET. RIVERDALE, NORTHBRIDGE, MASS.

East Brady Woolen Company
Manufacturers of
WOOL SHODDIES
Samples on application
EAST BRADY, PA.

Fine dark, all wool	4½-5
Gig, fine, all wool	1¼-4
No. 1 black, all wool cut	6-8

COTTON WASTE.

No. 1 Spinners	12-12¼
Machine Cop	7½-7¾
No. 1 Cop	7¾
No. 1 Card	10-11
No. 2 Card	8-9
No. 1 Oily Card	6
No. 2 Oily Card	4
Peeler Combing	12½-13
Egyptian Combing	12½-13
No. 1 Linters	4½
No. 2 Linters	3½-3¾
Woven White Clips	5
Woven Colored Clips	2-2½

Dyestuffs and Chemicals.

Acids.

Acetic, 100 lbs.	2.60-3.25
Citric, domestic	51-52½
Oxalic	8¼-8½
Sulphuric, 66 deg., 100 lbs.	1.00-1.50
Muriatic, 18 deg.	1.10-1.75
Tartaric crystals	28¾-29¼

Miscellaneous Chemicals.

Acetate of lime, gray, 100 lbs.	2.50-2.60
Alum, lump	1.75-1.85
ground	1.85-2.00
powdered	3.00-3.25
Aqua ammonia, 26 deg.	4¾-5¾
Ammoniac, sal., gray	6-7
Borax, bbls.	5¾-6¼
Brimstone, crude, ton	22.50
Copperas	65-80
Cream tartar, crystals	23¼-23¾
Fuller's earth, powdered, ton	18.00-22.50
Glauber's salt	50-70
Potash, chlorate, crystals	9¼-9½

M. J. TOOHEY & CO., OF FALL RIVER, MASS.
Banding made from Egyptian or White Cotton Yarn as Desired.
The Other Fellows Banding.

FIRE, LIGHTNING, WINDSTORM.

The HOME INSURANCE COMPANY NEW YORK

Organized 1853. MAIN OFFICES, 56 CEDAR ST.

Cash Capital, $3,000,000.

ASSETS January 1st, 1906	$20,839,174
LIABILITIES (Including Capital)	13,430,818
NET SURPLUS OVER ALL LIABILITIES	7,408,355
Surplus as regards Policy-holders	10,408,355
Losses Paid Since Organization Over	105,000,000

Note amount of net surplus after providing for all San Francisco losses.

HOME Policy-holders everywhere have protection, which is sure, notwithstanding conflagrations anywhere.

IS prepared to entertain liberal lines on Sprinkler-Equipped and Modern Improved risks generally, having a special department for the consideration of such business.

ELBRIDGE G. SNOW, President.

EMANUEL H. A. CORREA, Vice-Pres. AREUNAH M. BURTIS, Secretary.
FREDERICK C. BUSWELL, Vice-Pres. CHARLES L. TYNER, Secretary.
CLARENCE A. LUDLUM, Ass't Sec'y. HENRY J. FERRIS, Ass't Secretary.

powdered	8½-9
carbonate	4½-5½
Soda, bicarbonate	1.62½-1.72½
Soda, caustic, domestic, 60 per cent.	1.85-1.95
Sal., American	80
Sulphate, alumina	1.45-2.00
Vitriol, blue	5⅞-6½

Dyestuffs.

Acetate of soda	4½-6
Acid, picric, best crystals	23-30
tannic, commercial	32-40
Albumen, egg	60-75
blood	22-30
Alizarine, red	16
Aniline, oil	12-13
salt crystals	10-10½
Antimony salt, 65 per cent.	22½-25½
Bichromate of potash, American	8¾-9¼
Bichromate of soda	7¼-7½
Bisulphite of soda	1-2
Cutch, mat	4¾-5
boxes	6
Dextrine, imported potato	6-7
Divi-divi, ton	40.00-60.00
Flavine	23-50
Fustic, stick	6-11
Gambier	4⅜-6¼
Hypo. of soda	1.40-1.70
Indigo, Bengal, low grade	55-65
medium	65-70
high grade	75-85
Kurpahs	50-55
Gautemala	50-65
Manila	50-65
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Indigotine	95-1.00
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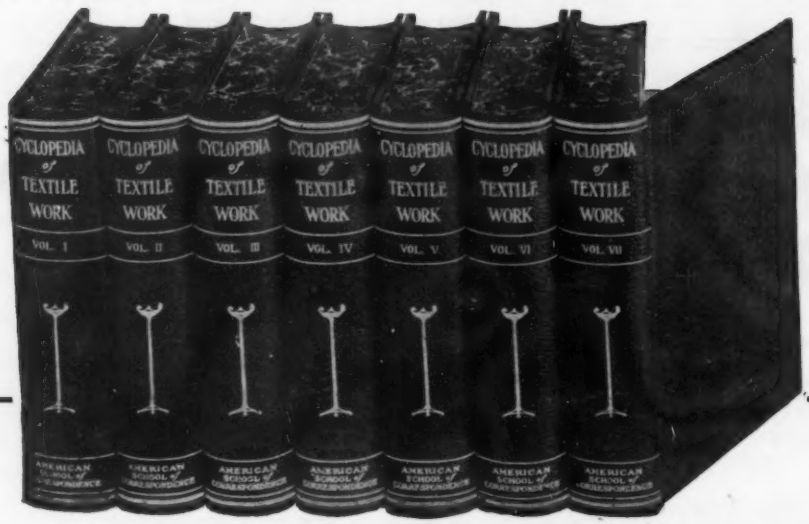
liquid	3-9
Madder, Dutch	12½-15
Muriate of tin, 33 degrees	11¼-12¼
54 degrees	17¼-18
Nitrate of iron, commercial	1¼-1½
Nutgalls, blue Aleppo	16-18
Persian berries	20-25
Phosphate of soda	1.95-2¼
Prussiate of potash	16¼-38
Quercitron, ton	21.00-25.00
Starch, corn, pearl	2½-2⅞
potato	4-5
wheat	5-5¾
Stannate of soda	12¼-15
Sumac, Sicily, No. 1, ton	80.00-85.00
Sicily, No. 2, ton	75.00-80.00
Tapioca flour	2¼-4
Tin crystals	22¾-25
Turmeric	5-8½
Zinc dust	6-6¼



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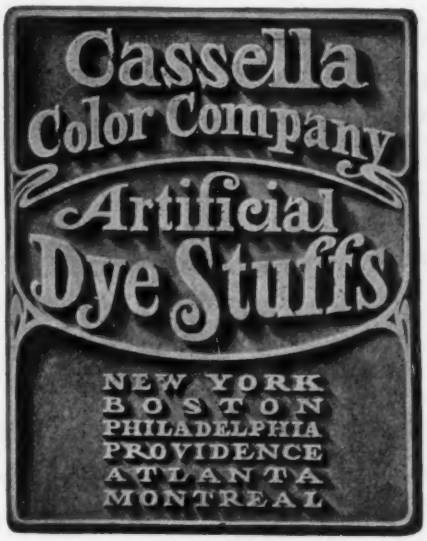

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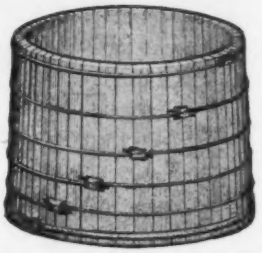

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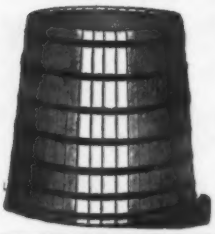

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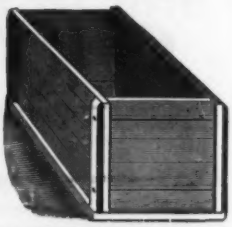

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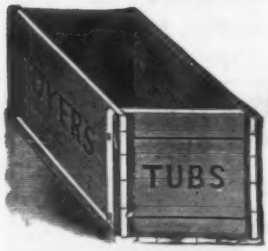

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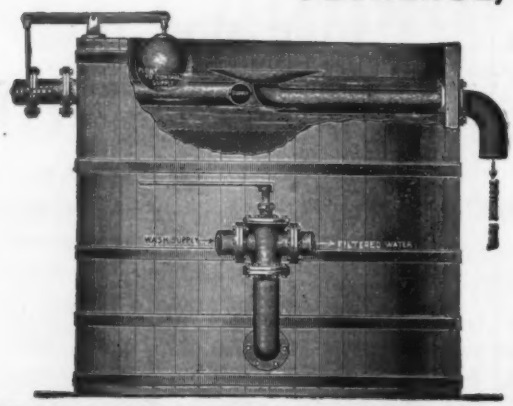

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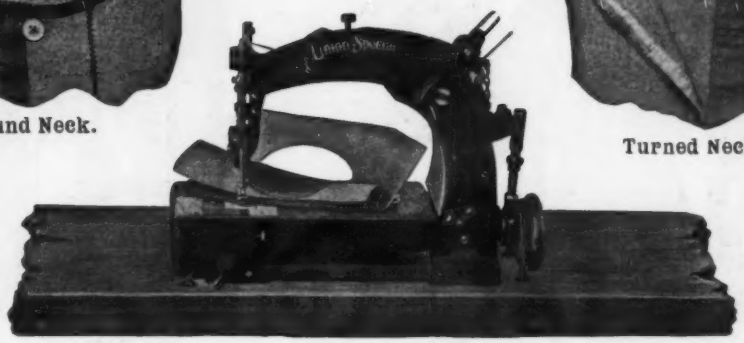

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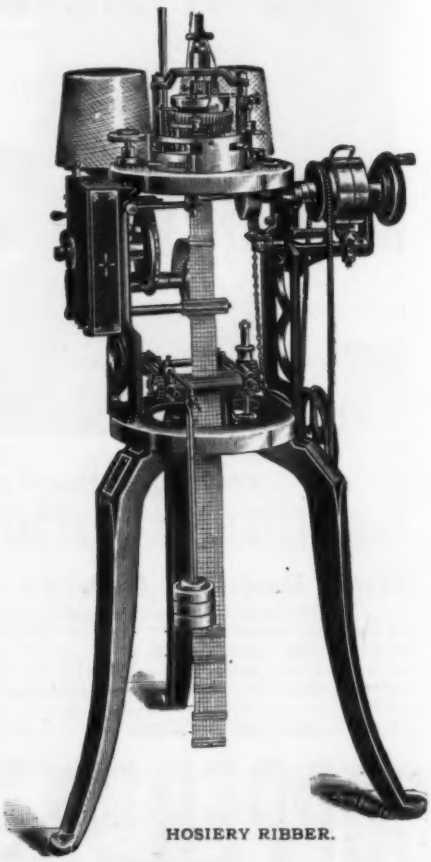

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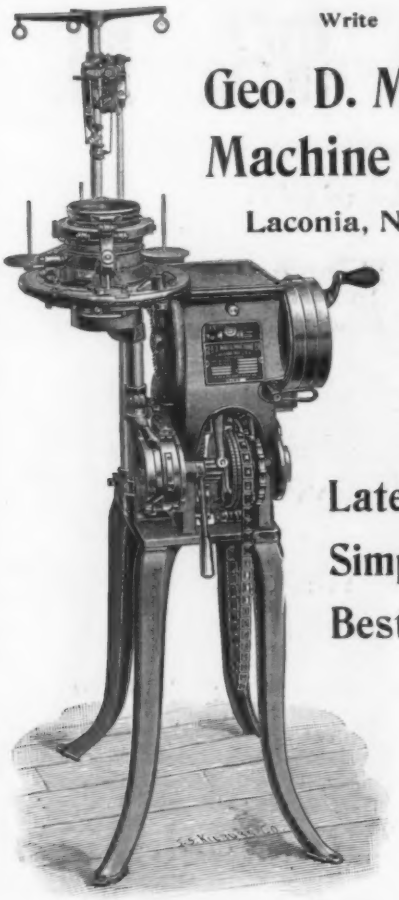

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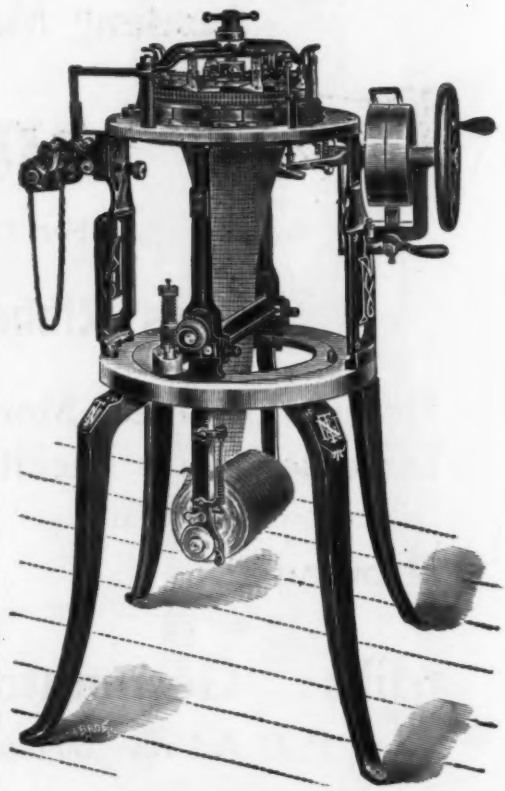

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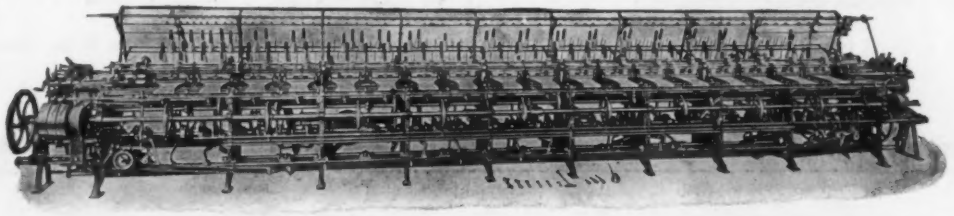

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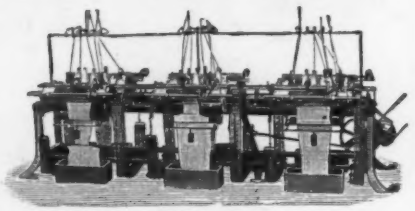

GROSSER Flat Knitting Machines
For HAND Power or FULLY AUTOMATIC Power MACHINES. Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.

FRENCH FRAMES
C. Terrot Söhne, Cannstatt, Würt, famous builders of the best Circular Frame for Finest Underwear, Fleece Linings, Gloves, Special á-jour (open work) Fabrics, etc.

RASHEL MACHINES [Double Rib Warp Knitting Machines.]
For Fancy Goods in largest variety, Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc., in silk, wool, cotton.

SPOOLERS, Parafiners, Finishing Machines for the knitting business.

Exclusive Agency for the Famous

Julius Koehler DIAMENT OVERSEAMERS, indispensable for all full fashioned articles, Hosiery, Gloves, Jersey Sweaters, Sporting Goods, etc.

LOOPERS Double thread Lock stitch, self-cutting and cleaning attachment. Reliable money saver.

FRITZ ZACKE LATCH NEEDLES, for any purpose in the knitting line, patented rivets.

Samples, Specifications, Prices, etc., upon application.

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ALL KINDS OF NEW AND SECOND HAND **KNITTING MACHINERY**

A RARE OPPORTUNITY TO BUY.

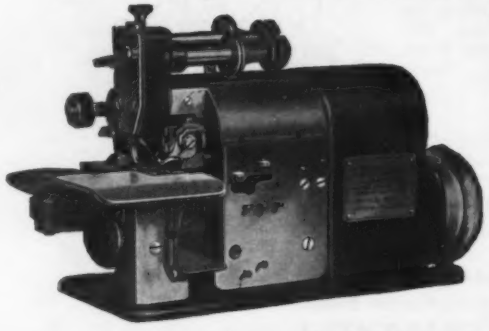
1 Bruce band folder and cutter.
38 Beattie & Hepworth & Abel loopers.
6 Hosiery presses (lever).
114 Lamb and Grosser sweater machines.
200 Ribbed underwear machines, various sizes.
50 Brinton & Co. ¾ aut. knitters, sizes.
30 Union Special machines, various styles.
1 Rotary fire pump.
100 feet woven rubber hose, 3 inches dia.
1 paper cutter.
3 Toque machines.
100 Brooks welters.
8 Fleecing machines. (Nappers.)
250 Brinton & Co. and other make hosiery ribbers.
140-Ribbed shirt machine cylinders and dials, all sizes, cuts and makes.
2 Grosser Jacquard machines for gloves.
3 Cyclone dryers. (Hosiery.)
2 Typewriters.
5 Band folding and cutting machines.
1 Centrifugal Pump.
1 Small Steam Pump. 1 Small Belt Pump.
15 Rudolph Sewing Machines.
2 Lamb border machines, auto. rack.
1 Newmans watchman's clock, 16 stations.
10 German sweater machines, flat.
3 Double Ribbed Machines.
1 Fireproof Safe.
5 Cop and Skein Winders.
2 Pownall Screw Presses 34 x 52 in.
1 Cleveland 42″ Belt Driven Extractor.
5 Pair Platform Scales.
2 Singeing Machines.
1 Hosiery Printing Press.
3 Cornely Embroidery Machines.
34 Standard "B" 200 Needle Machines.
20 " B 188 " "
54 " B Machines for sizes.
24 Mayo "Acme" " " "
500 Dozen hosiery shaping boards.
1 Crane Style Collarette Machine 20 in. diameter 16 Needles.

WRITE FOR COMPLETE LIST. APPRAISEMENTS A SPECIALTY.
We are always in the market to buy good second-hand Knitting and Finishing Machinery.

The Merrow

FAST
DURABLE
Light Running

High Speed Overseaming, Overedging and Scallop Stitch Machines are



OUR NEW STYLE 60 MACHINE for Trimming and Overseaming in one Operation produces the strongest, best Seam and does it with the greatest economy.

USE STYLE 18 for Horse Blankets. STYLE 17 or 22 for Bed Blankets. STYLE 35 B SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. HARTFORD, CONN.

Knickerbocker Building, Sixth and Arch Sts., Phila. 346 Broadway, New York

Full Fashioned Hosiery Machines

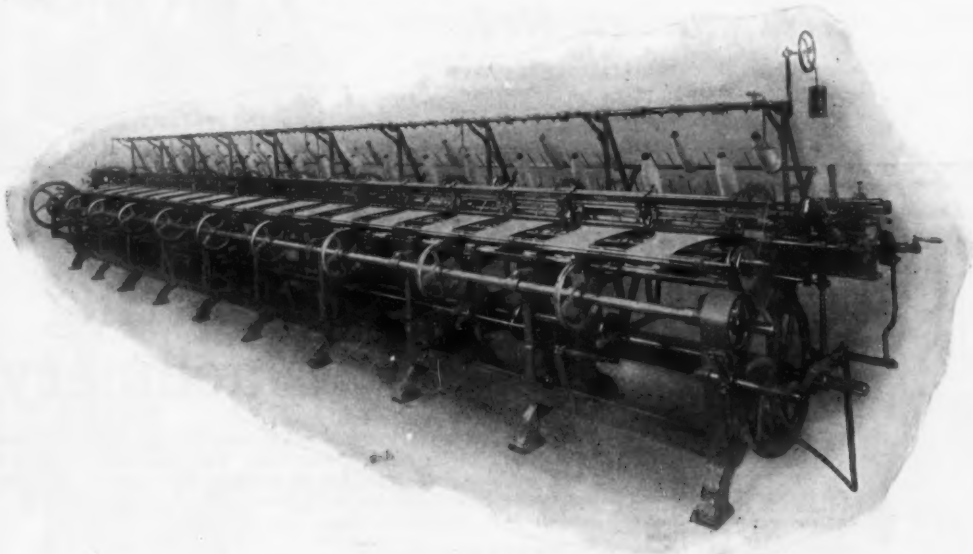
BUILT BY

SCHUBERT & SALZER

Largest Manufacturers of all classes of Hosiery Machines.

The plant, which is located in Chemnitz, Germany, declared by engineering experts and hosiery manufacturers to be the finest of its kind, is equipped with the most modern American and European machine tools, employing 1600 skilled workmen.

These machines have been proven the best constructed and most productive in the market for the manufacture of cotton, lisle and silk hosiery and since their introduction into this country 13 years ago have always been the leaders among a number of competitive makes, as upon trial they have fully borne out all that is claimed for them.



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All the leading manufacturers of full fashioned hosiery in this country. Largest individual order for 65 eighteen section machines placed recently by the new million dollar concern, the Brown-Moore Hosiery Co. of Philadelphia.

AMERICAN REPRESENTATIVE:

OTTO WALTHER, = 507 Bourse, = Philadelphia.

The Invincible

Full Automatic.

"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

E. JENCKES MFG. CO.

Pawtucket, R. I.

PHILADELPHIA OFFICE,
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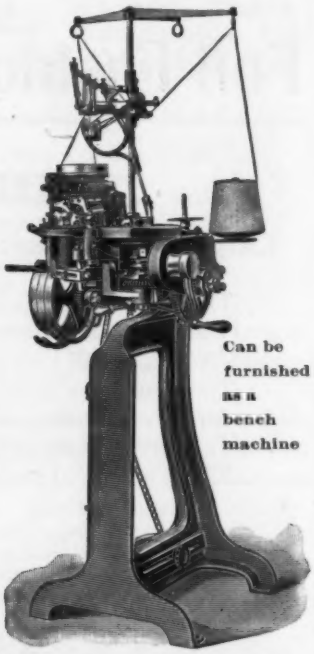
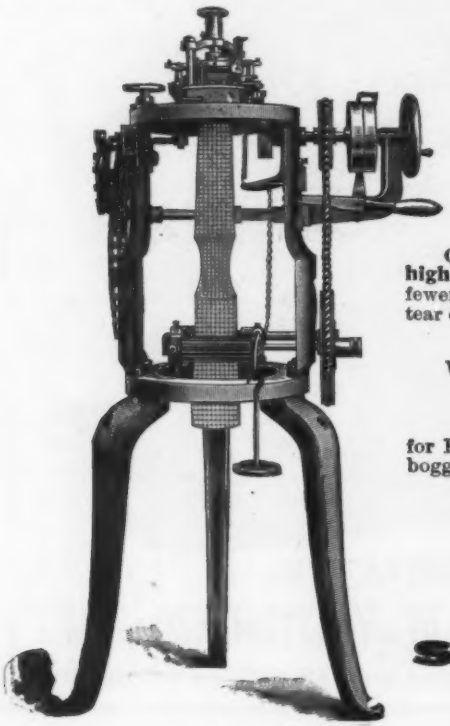


Can be furnished as a bench machine



High Speed Rib Knitting Machinery.

Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

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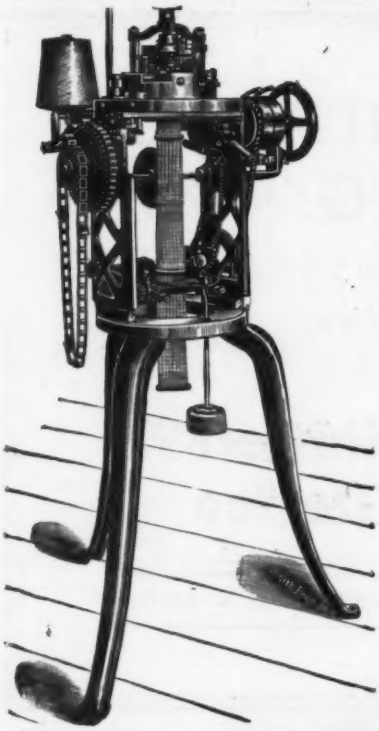
Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

STAFFORD & HOLT,

LITTLE FALLS, N. Y.



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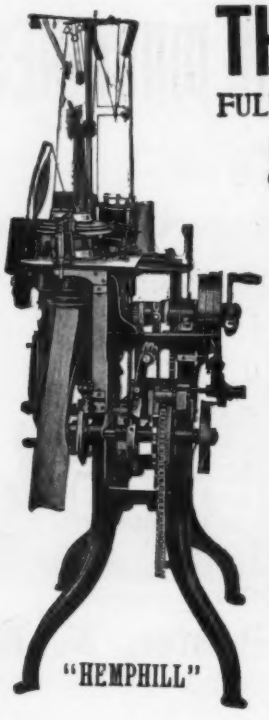
BUILDERS OF

Knitting Machinery

For HOSIERY and UNDERWEAR.

Complete Estimates Furnished. Send for Particulars.

The cut shows our **Improved Automatic Ribber** with Welt and Slack Course for Half Hose, Tops and Ribbed Legs.



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THE TWO LEADERS

FULLY AUTOMATIC HOSIERY KNITTERS

FOR MAKING ALL KINDS AND GAUGES OF SEAMLESS HOSIERY

One with **GEARS**, the other with **CHAIN** for pattern mechanism, to meet the various tastes of different manufacturers.

Both used and approved by leading hosiery manufacturers.

Both contain all the well-known essentials demanded of first-class knitting machines.

With these two machines we can supply all manufacturers' possible wants in the best possible manner.

Write us for further particulars and prices.

We also make all kinds of **LATCH NEEDLES.** Many leading manufacturers use our needles and say they are the best on the market. Send us a trial order.

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KNITTING MACHINE AND NEEDLE COMPANY

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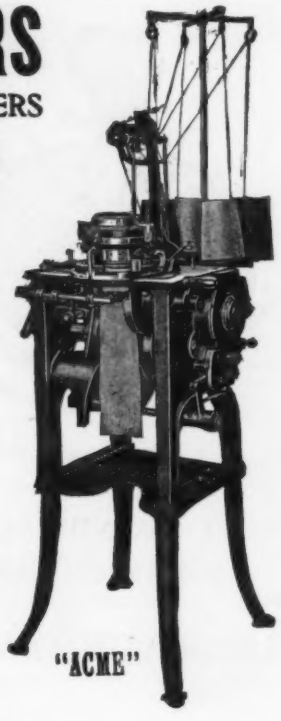
Philadelphia Office, Knickerbocker Bldg., cor. 6th & Arch Sts.



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EXCELSIOR KNITTING MACHINE MFG. CO.

Meadow and Washington Streets

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BUILDERS OF

Full Automatic Knitters

With or without **Transferring Device**

ALL SIZES AND GAUGES, 2 1-4 INCH TO 4 INCH

CIRCULAR KNITTING MACHINES

Either plain or full automatic, with stop motions complete. 4 to 24 feeds for

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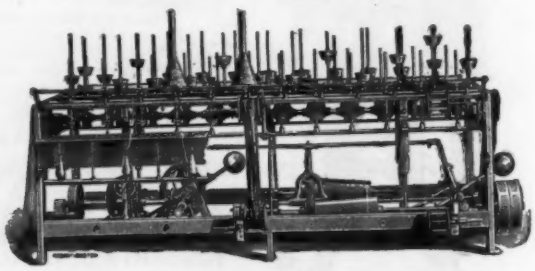
Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



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ABEL WINDERS, SEAMERS and LOOPERS.

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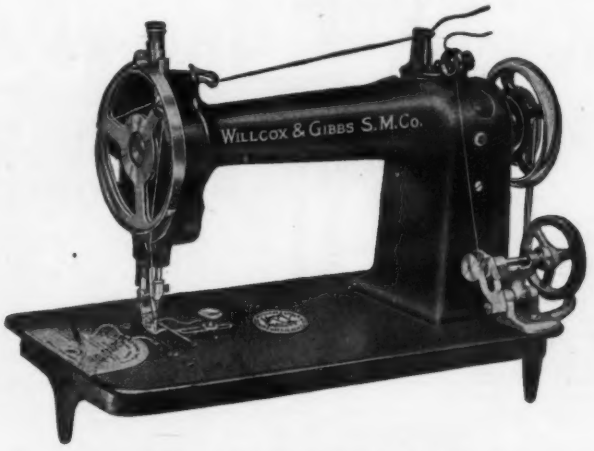
Why not
DECREASE the Cost and
INCREASE the
Production by using the

Everywhere
This Trade-mark is a recognized guarantee of
Perfect Sewing Mechanism.

Business Established 1859.

Willcox & Gibbs High-Speed Lockstitch Machine.

WE INVITE COMPARISONS
As to the Cost of Repairs for our Machine and those of other makes.



AN INSTRUMENT OF PRECISION
3,500 to 4,000 Perfect Stitches Per Minute.

For Facing and Banding Knit Shirts and Drawers and for making up Muslin Underwear, Petticoats, Shirtwaists, Ladies' Belts, Millinery, Umbrellas, Shirts, Collars, Cuffs, etc.

Samples and Circulars by mail on application.

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General Offices: 658 Broadway, Cor. Bond St., New York.
Branches in the Principal Cities of the United States and in
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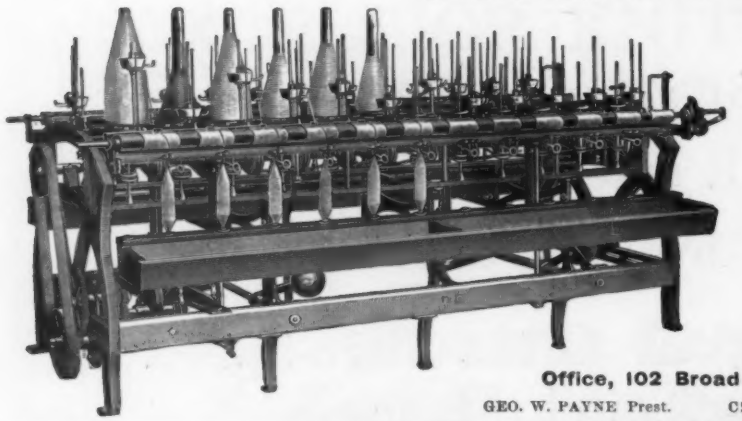
OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



Improved

Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

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GEO. W. PAYNE Prest. CLINTON F. PAYNE, Sec'y. and Treas.

Full Automatic
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Machine

for high-grade sweaters, jerseys, etc. Latest improvements

Recognized as the best in the market. With jacquard attachment allowing *change of operating mechanism every half round*, therefore unrivaled in variety of patterns. One operator attends to three of these machines.
High speed. Large production.
Ask for samples and full particulars.
State gauge and size you need.

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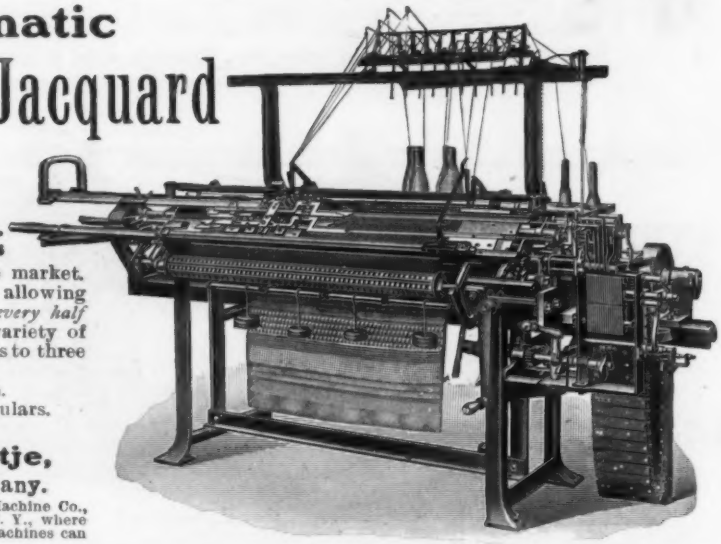
Mühlhausen Thr., Germany.

Representatives: Ainslie Knitting Machine Co., Ainslie and Humbol Sts., Brooklyn, N. Y., where all kinds of our hand and automatic machines can be seen working.



Oils

Sewing Machine Belting, Press Boards, Belt Hooks, Lace Leather, Leather Belting, Latch Needles, Oilers of every description, Mill Baskets and Brooms, Mill Banding, Rings and Springs, Packings of all kinds, Fire Pails, Shears and Trimmers, Cloth Knives, Etc.

E. W. Murphey & Co.
HUDSON, N. Y.
Established 1831.

and Mill Supplies

WILLIAM C. BULL, BENNINGTON, VERMONT.

MAKER OF

For Ladies', Gents' and Children's Goods.
Latest Styles.
Best Workmanship.

Drying Form Boards

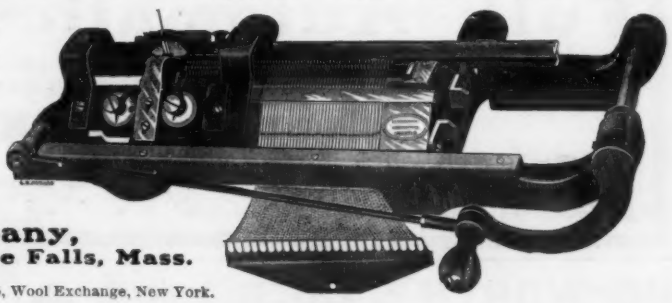
OF EVERY VARIETY.

The LAMB

LEADER OF KNITTERS

Original and Still the Best.

Most widely used; being operated in every civilized country in the world. For description, prices, etc., see catalogue.



Circular Machines, Rib Top and Seaming Machines.

Lamb Knitting Machine Company,

P. O. Box, 5888, **Chicopee Falls, Mass.**

J. E. WOODHEAD, 100 22d St., Chicago.
L. D. SANBORN, Room 505, Wool Exchange, New York.

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Patentee and Sole Manufacturer of
THE PNEUMATIC CONVEYOR

For the handling of wool and cotton stock, rags, excelsior, jute and all kinds of fibrous material, wet or dry. Also spool elevators, steam heating and ventilating, and mill work generally. Blower and fan work a specialty. This conveyor is patented. Beware of infringement.

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A good thing to know that any kind of textile goods cased or wrapped with

National Duplex CASE LINING

is immune from the disastrous effects of moisture in transit. *Our samples and prices are eloquent salesmen. Are you open for conviction?*

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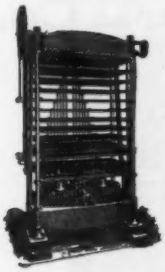

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For Knit or Woolen Goods.

The most reliable machine of the kind on the market.

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Successors to
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Practical Automatic
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Will cut anything with a Welt
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Drying Forms.

BOARDS FOR FAST BLACK DYERS.

HOSIERY FINISHING BOARDS.

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Hosiery Boards.

PAXTON & O'NEILL'S

Full Automatic Knitter

FOR ALL KINDS AND GAUGES OF SEAMLESS HOSIERY.
RANGE ON HALF HOSE AND LADIES FROM 260 NEEDLES DOWN.

3-4 AUTOMATIC KNITTER

With Lace Effects.

Exclusive rights to BROWN'S LACE ATTACHMENT.

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Patent Single-Stitch

LOOPING MACHINE.

Needle working from the inside, avoiding the breaking of needles and points and picking up the metal.

Single and Double Stitch, or Both Combined.

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Patent Loopers

Both single and double Stitch. with the Patent Raised or Straight Points.

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GAS ENGINES for city or country
BRUSHING MACHINERY
KNITTING MACHINERY
} EFFICIENT DURABLE LOW IN PRICE

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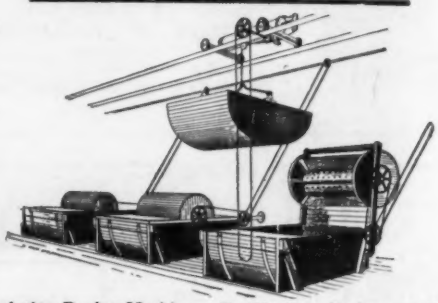
Dyeing Machinery

FOR WARPS AND PIECE GOODS

Bleaching Machines



Circulating Dyeing Machines. For Hosiery, Underwear, Raw Stock and Rags. Singeing Machines for Hosiery. Mercerising Machines.

Shipping Clerk's Fountain Marking and Stenciling Brushes

A necessary article in every Textile Mill
Agents Wanted.

Handle holds the ink. Send for particulars and circular.

Universal Fountain Brush Co., 100 E. 129th St., New York City

WALTER & CO., Limited

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SPECIAL MANUFACTURERS OF

Knitting and Winding Machines

for hand and power driving, of best quality and perfect construction.

Specialty: Jacquard Machines

for hand and power driving for manufactur ing of sweaters and every possible fancy article of that nature.

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American Representative

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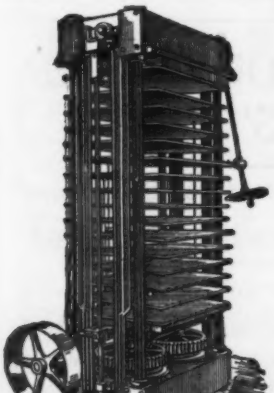

Reliance Hot Plate Press

For Hosiery and Underwear Trade.

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Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared: Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c. Textile World Record, Boston.

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Knitting Machinery

Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders. **Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.**

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European Representative:
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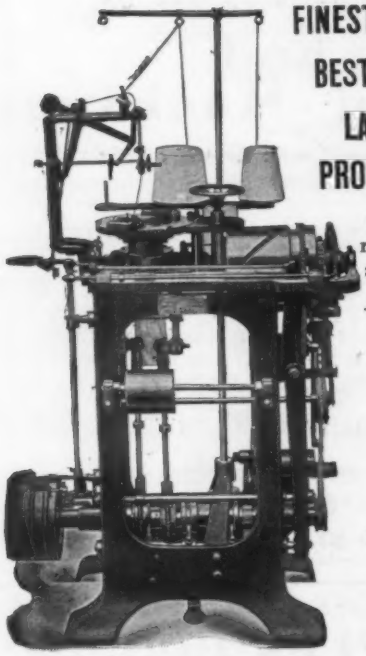
1x/4 Schubertgasse, Nr. 23, Vienna, Austria.

"NATIONAL"

Stands for



FINEST GAUGES
BEST FABRIC
LARGEST
PRODUCT ON

Greatest Variety of Laces and Novelties.

All automatic.

Lowest Cost for Operating

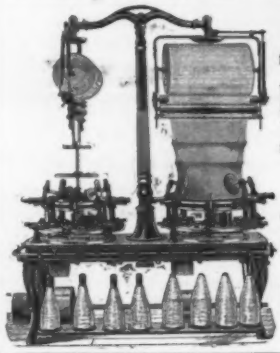
Also
Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

NATIONAL AUTOMATIC KNITTER CO.

728 Cherry Street, PHILADELPHIA, PA.

We are the Oldest Manufacturers

of this Design of Machine in this Country



The members of our firm are originators, as the records of the U. S. Patent Office will show since 1875.

Call and look over our numerous improvements.

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Ruth Rib Knitting Machinery is the latest

and most improved in the market to-day for any style of Rib Knit goods. They are durably built, simple in construction and easily operated with our Automatic Stop Motion.

We have attained the greatest production with the least menders and needle breakage over all other machines

Write for our liberal trial proposition

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MAKE YOUR PAPER BOXES TALK.

Use Your Own Name or Trade Mark Paper for Covering Your Boxes.

We can now furnish your box-maker with a special design paper for your own private use at a price as low as cheap white glazed.

To secure this price, orders must be for two hundred reams at a run.

Let us submit samples showing colors and shades, and if desired, we will make up a design for you.

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Hosiery Machines

right!

Investigate what *each make of machine will do*, in quality and quantity of product, the cost of repairs, length of life, etc. Such an investigation will show *you* why so many manufacturers

Buy the Standard F

It is good on the start—and *stays good*

Write for catalog and prices.

STANDARD MACHINE CO.

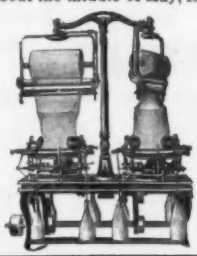
HOSIERY MACHINES.

508 Ludlow Street, Philadelphia, Pa.

We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer. I started in this business about the middle of May, 1900.



Tompkins Knitter

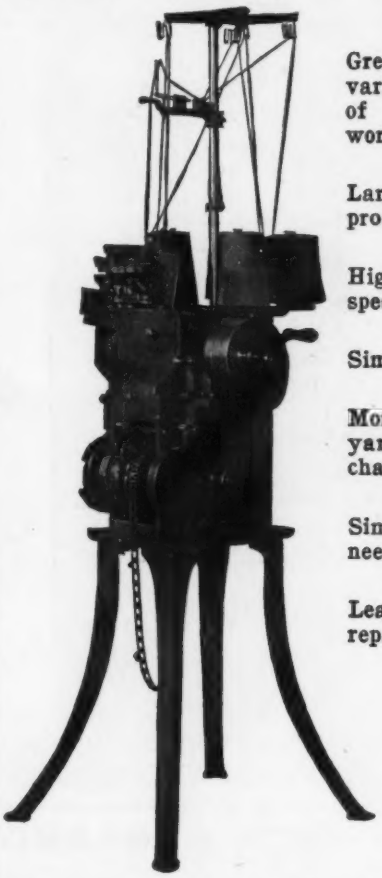
This design was adopted in 1875.
BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLY Was born, according to his testimony in the case above cited.

Hemphill's Latest

"The Banner"

FULL AUTOMATIC MACHINE.

Specially adapted to Platted Goods.



Greater variety of work

Largest production

Highest speed

Simplest

More yarn changes

Simpler needles

Least repairs

The wonder of the 20th Century

Manufactured by the

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321 PINE ST., PAWTUCKET, R. I.

Established 1870.—Incorporated 1890.

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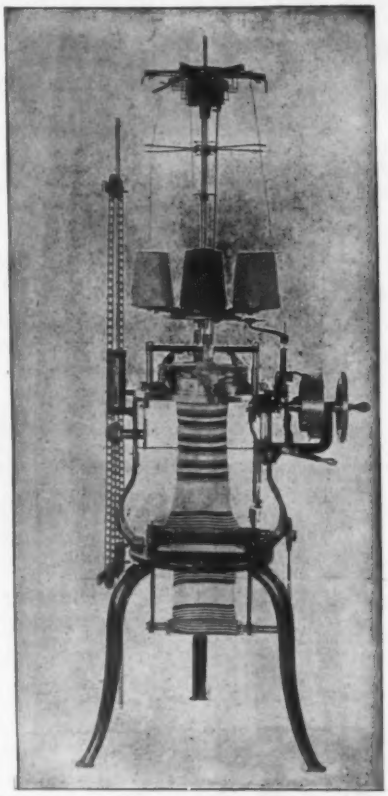
Manufacturers of

Spring and Latch Needle Machines for both rib and plain work, producing a great variety of fabrics. Patent removable hardened Wing Burr Wheels.



Improved Automatic 3-Colored Plain Striper.

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,

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KNIT FABRICS CUT TO LENGTH.

Our Knit Fabric Cutter

will cut from the roll, knit fabric into any length from 10″ to 40″ at the rate of 100 pieces a minute. The lengths are accurate, the waste is a minimum, the labor unskilled.

We also make a Slitter

for cutting these goods into narrow strips and rewinding same into rolls.

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Manufacturer of Paper Box Machinery.

Ninth above Market Sts., Camden, N. J.

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ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS.

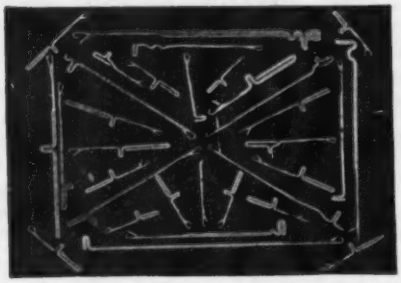
SOLID SASH AND CURTAIN CORDS,

SHOE AND CORSET LACES, BANDING

AND ALL BRAIDED FABRICS.

TRY OUR "SUPERIOR" OR SUNKEN RIVET-HEAD NEEDLES

They will save you money.



Dodge Needle Co., Manchester, N. H.

WM. COREY CO.,

Manufacturers of Knitting Machine

Latch Needles

MANCHESTER, N. H.

EXCELSIOR NEEDLES.

The best Hosiery Needles in the market.

Manufactured by

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AND BURR BLADES OF ALL KINDS.

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Standard Latch Needles

MANUFACTURED BY

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The Largest Manufacturers of Machine Needles in the World.

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Longer Wear. Better Work.
Less Mending. Fewer Seconds.
Hav· you tried our
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MANUFACTURERS OF

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Needles for all makes of Knitters and Ribbers.
Keystone Spring Bottom Needles for all makes of Knitting Machines always in stock for immediate delivery.
Special Needles made to order.

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The Continental Latch Needle Company.

Manufacturers of the BEST GERMAN NEEDLE on the Market.

RIVETS GUARANTEED. Samples on application. SPRING NEEDLES A SPECIALTY.

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4,000 H.P., 72 ft. head, arranged to drive generator and a single turbine to drive exciter. Five settings built for the Hudson River Water Power Company's Spier Falls plant and 14 pairs 51 inch for their plant at Mechanicsville, N, Y.

Write for Catalogue if contemplating purchase of turbines

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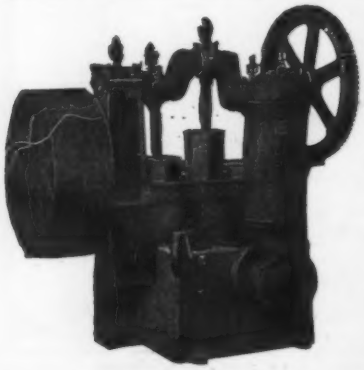

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Of over rating lightness of construction and the desire to place on the market a pump that is cheap—is seen in the fact that during the past month we have replaced four pumps of other makes with

Goulds Efficient Power Pumps

We manufacture a complete line of Triplex Pumps for every service and will be pleased to send catalog on application.

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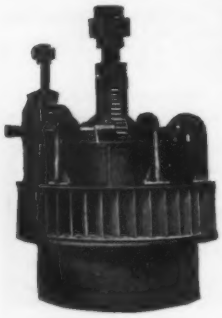
To insure close speed regulation in a turbine it is necessary to have a gate which is easily operated. The gates on our

SAMSON TURBINES

are balanced and consequently moved with the greatest ease.

Write Department A-5 for Catalogue.

The James Leffel & Co., SPRINGFIELD, OHIO, U. S. A.



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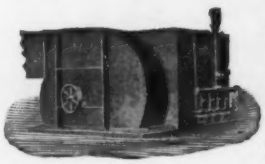
RISDON CELEBRATED TURBINE
ALCOTT HIGH DUTY TURBINE
LEVIATHAN HINGED GATE TURBINE
On Horizontal or Vertical Shafts.

These Turbines are recognized as the most effective water wheels made. Your inquiries should come direct to us for this class of machinery.



Up-to-date Equipment

for the Textile Mill includes provision for adequate ventilation.

This is insured, together with a comfortable temperature, by the "ABC" Fan System.

Full information upon request.

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NEW YORK CHICAGO ATLANTA LONDON

TEXTILE Mill Lubrication

Dixon's Flake Graphite offers economical, cleanly lubrication. It will not stain the most delicate fabric. Get free sample "120-C."

Joseph Dixon Crucible Co.
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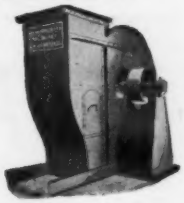
D X N TRADE MARK

CONSULTING ENGINEERS AND OWNERS

WILL FIND OUR



EXPERIENCE

USEFUL TO THEM

OUR ENGINEERING FORCE IS ALWAYS AT YOUR DISPOSAL

HEATING, VENTILATING
MECHANICAL DRAFT

MASSACHUSETTS FAN CO.
WATERTOWN, MASS.

You Save Enough Insurance to Pay for the Equipment.

So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.

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Lowell Crayons

Meet the requirements of any cotton, woolen or worsted mill.

May we send samples? 15 colors and white.

Lowell Crayon Co., Original Manufacturers **Lowell, Mass.**

Trade Mark on every box.

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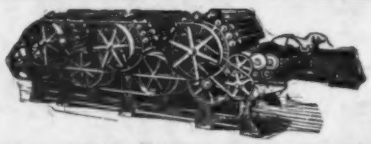
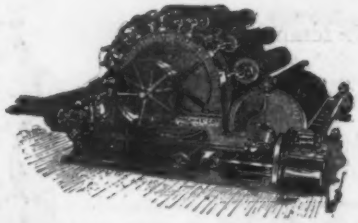
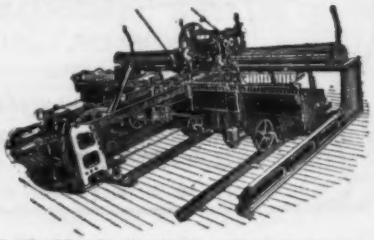


CARNETT MACHINES AND PICKERS

For reducing to Fibre Cotton and Wool Waste, Cloth Clippings, Etc.



WOOLEN MILL MACHINERY



Including Rag, Wool and Burr Pickers, Wool, Worsted and Shoddy Cards, Mules, Yarn Twisters, Warpers, Dressers, Spoolers, Etc.

Complete Equipment for Manufacturing Cotton Batting for All Purposes.

Special Carding and Spinning Machinery for manufacturing Yarn from such low grade stock as Mill Sweepings, Linters, Etc.

We reclothe or furnish new Metallic Toothed Cylinders and Rolls and relagg or furnish new Cylinders for any make of Rag Picker.

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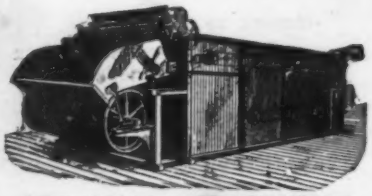
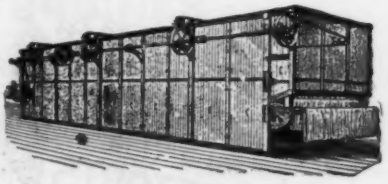
"CYCLONE" DRYERS

For Cotton Stock, Wool Stock, Rags, Yarn, Cloth Underwear, Stockings, etc.



Automatic Cotton or Wool Stock Dryer.



Automatic Yarn Dryer.

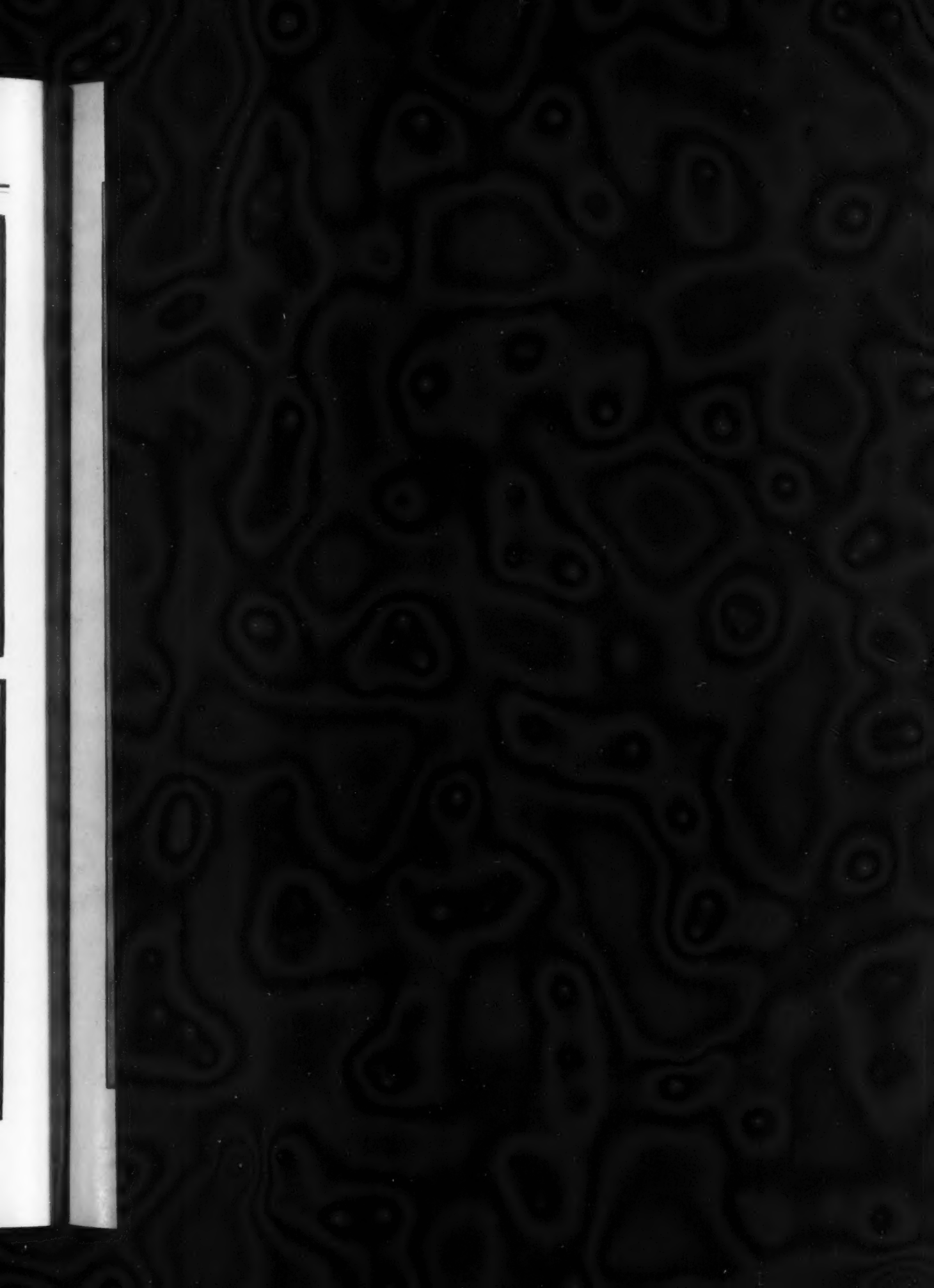
Steel Bladed Ventilating Fans.

Iron Bowl Yarn Scouring Machines.

Complete Carbonizing Outfits for Wool, Rags or Cloth.

THE PHILADELPHIA TEXTILE MACHINERY CO.,

Hancock and Somerset Streets, PHILADELPHIA, PA., U. S. A.



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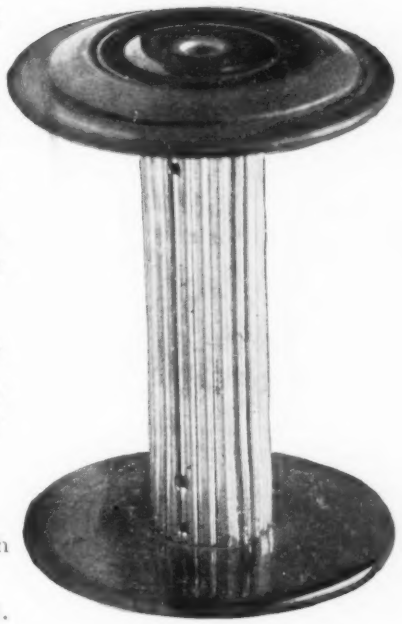
These spools are of great value for use with

SPOOLING WARPING
TWISTING BEAMING

And other Textile Machinery.

They will not break, warp or come apart under working conditions.

They are the cheapest spools to use considering first cost, endurance and security to yarn.



Waterproofed fibre heads.

Shrunk and waterproofed birch bushings.

Barrels of corrugated steel, tinned.

No glue used in construction.

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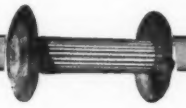

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BUILDERS OF

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At equal speeds have 50% greater volumetric capacity than other makes of Propeller Fans. For equal duties show 15% saving in power.

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IRON OR STEEL
for Fire Protection and Domestic Service.
Built in all sizes.
Write for catalogue.
Plans and prices cheerfully given.
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VALVES AND FITTINGS

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